DRAFT ENVIRONMENTAL ASSESSMENT

Information & Communication Services Division
Kaupulehu Radio Site and Tower

Kaupulehu, North Kona District
Island of Hawaii

DAGS Job No. 11-10-0477

Prepared for:

State of Hawaii
Department of Accounting and General Services

Prepared by:

Wilson Okamoto Corporation

May 2008

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ENVIRONMENTAL ASSESSMENT

Information & Communication Services Division
Kaupulehu Radio Site and Tower
Kaupulehu, North Kona District, Hawaii

DAGS Job No. 11-10-047
TMK: 7-2-002:001

Prepared for:

State of Hawaii
Department Accounting and General Services
Division of Public Works
1151 Punchbowl Street
Honolulu, Hawaii 96813

Prepared by:

Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
WOA: 7739-10

May 2008

SUMMARY

Proposing Agency:	State of Hawaii Department of Accounting and General Services 1151 Punchbowl Street Honolulu, Hawaii 96813
Accepting Agency:	State of Hawaii Department of Accounting and General Services 1151 Punchbowl Street Honolulu, Hawaii 96813
EA Preparer:	Wilson Okamoto Corporation 1907 South Beretania Street, Suite 400 Honolulu, Hawaii 96826 Contact: John L. Sakaguchi, AICP, Senior Planner Tel: 808.946.2277; Fax: 808.946.2253
Project Location:	Kaupulehu, North Kona District, Hawaii
Recorded Fee Owner:	B.P. Bishop Estate
Tax Map Key:	7-2-002:001
Area:	28,900 SF (0.66 acres) approximately 7,065 acres (total parcel)
State Land Use Classification:	Agricultural
County Zoning:	Agriculture (A-20a)
Proposed Action:	Construction of a 150-foot high 4-leg self-supported pipe leg tower with mounted antennas, an approximately 900-square foot building, and other supporting facilities for the State of Hawaii Department of Accounting and General Services (DAGS) Information and Communication Service Division to support the modernization of the shared State and Federal microwave system to digital operation.
Impacts:	No significant impacts are anticipated from construction and operation of the Kaupulehu facility including a tower, antennas, and related facilities.
Parties Consulted During Pre-Assessment:	US Army Corps of Engineers US Fish and Wildlife Service US Coast Guard State of Hawaii Department of Agriculture State of Hawaii Department of Defense State of Hawaii Department of Land and Natural Resources/ Historic Preservation Division State of Hawaii Department of Hawaiian Home Lands State of Hawaii Department of Health State of Hawaii Department of Transportation Office of Hawaiian Affairs County of Hawaii Civil Defense County of Hawaii Fire Department County of Hawaii Planning Department County of Hawaii Police Department County of Hawaii Department of Public Works Hawaiian Electrical Light Company

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PREFACE

Chapter 343, Hawaii Revised Statues (HRS), as amended, Environmental Impact Statements, requires that a government agency or a private developer proposing to undertake a project consider the potential environmental impacts of the proposed project by preparing an assessment. Use of public funds for a project is among the criteria set forth in Chapter 343, HRS which requires preparation of an environmental assessment. The Kaupulehu facility will be constructed and operated with funds provided by the State of Hawaii Department of Accounting and General Services (DAGS).

This Environmental Assessment (EA) has been prepared to meet the requirements of Chapter 343, HRS, as amended, and Hawaii Administrative Rules Title 11, State of Hawaii Department of Health, Chapter 200, Environmental Impact Statement Rules. It is anticipated this EA will be processed as a Finding of No Significant Impact (FONSI).

The Kaupulehu project site is located within the Agricultural District as designated by the State Land Use Commission.

The project site is designated Extensive Agricultural on the County of Hawaii General Plan Land Use Allocation Guide (LUPAG) Map. The County of Hawaii zoning designation for the project site is Agriculture (A-20a). A Special Permit approved by the County of Hawaii Planning Commission will be required to construct and operate the Kaupulehu facility.

1. INTRODUCTION

1.1 Project Background

The State of Hawaii Department of Accounting and General Services (DAGS) through its Information & Communication Services Division (ICSD) carries out the responsibilities for statewide telecommunications for the State of Hawaii. The ICSD owns and operates microwave radio transmission systems, antennas, towers, buildings, and related communications facilities and infrastructure throughout the islands. The ICSD also plans, coordinates, organizes, directs, and administers services to ensure the efficient and effective development of communications systems. Over the years, public safety, emergency response, and law enforcement agencies have benefited from the significant advances in communications technology. To fulfill their public service missions, these government agencies rely on telecommunications to communicate and transmit information and data between offices and facilities as well as to communicate with personnel in the field.

1.2 Purpose and Need

The primary purpose of the Kaupulehu Radio Site and Tower project will be to support the rebuilding and modernization of a microwave communication system to be owned by DAGS and shared with State and Federal agencies. This system, known as Anuenue Radio system, is a successor to the "Hawaii Rainbow Communications System," commonly known as "Rainbow." which was an agreement among three State and three federal agencies to share infrastructure and microwave radio transmission systems. The Rainbow resulted in a statewide system of radio tower facilities and microwave radio interconnections that were used by federal, state, and local agencies in support of their law enforcement, public safety, emergency response, and civil defense missions. The Rainbow agreement dissolved at the end of September 2002.

The Kaupulehu facility will be totally funded by the State of Hawaii and represents a part of the infrastructure provided by the State to the Anuenue Radio system and to support other public agency projects. On January 21, 2004, DAGS was issued a radio station authorization for the Kaupulehu site from the Federal Communications Commission Public Safety and Homeland Security Bureau. Thus, at this time, no further Federal license will be needed to operate the frequency assigned to the Kaupulehu facility.

The Kaupulehu project is a partnership between DAGS and the US Coast Guard (USCG). In addition to the two partner agencies, other public agencies planning to use the Kaupulehu facility include: University of Hawaii Interactive Television Services (UH ITS); and County of Hawaii Police Department. In addition, the Kaupulehu facility will include the capability to accommodate additional antenna, if necessary. The Kaupulehu facility will be administered by the ICSD. Thus, the Kaupulehu facility will be a public facility to be used only by public agencies for public purposes.

The Kaupulehu facility is one of the radio facilities that were funded by the State Legislature to support the modernization of the Anuenue Radio system. Legislative funding was sought and provided with the understanding that the facilities to be developed would be designed to accommodate the radio communications infrastructure needs of other State and county agencies.

The purpose of the Anuenue Radio system is to install a modern high capacity digital interconnect to replace the Rainbow analog radio channels used by various agencies. The digital interconnect will facilitate voice, digital radio, video, and data communications. The backbone of the new digital system will have the capability to transmit 155 Mbit/s (megabits per second), which is equivalent to 2016 traditional voice channels or about 17 times the capacity of the Rainbow analog system. The conversion to a digital system is needed to handle the expanding voice and data communications requirements of the public safety community. The conversion to high capacity digital microwave was also prompted by both the Federally-mandated reassignment of analog microwave frequencies to personal communications systems (cellular telephones), and by public safety agencies' growing need for communications services to properly serve the public in the coming years.

In addition to the Kaupulehu facility, DAGS has recently constructed facilities on Kahua Ranch in North Kohala, on eastern Oahu on Koko Head, and in central Molokai at Puu Nana. As part of the agreement with DAGS, the US Coast Guard is refurbishing its existing facilities at Mauna Kapu, Oahu and at Haleakala, Maui and will construct new facilities in central Oahu and east Hawaii to accommodate the new digital microwave radio system. Existing State facilities elsewhere on Kauai, Oahu, Lanai, Maui, and Hawaii will also be used to support the Anuenue. The ICSD will license, own, and operate the microwave radio links that will connect the Kaupulehu site to other State sites in Hawaii and to USCG radio sites on Maui and the island of Hawaii.

The new series of radio sites, including the Kaupulehu site, are necessary to meet the line of sight criteria and to provide the minimum path length required for the new digital microwave radio system to operate reliably. Even if they were not reassigned by the Federal government, frequencies in the 2 GHz (gigahertz) microwave band previously used by the Rainbow could not have been used to provide high capacity digital bandwidth due to regulatory constraints. Further, current regulatory trends either have reallocated or will soon reallocate all of the 2 GHz frequencies previously used for long haul and over water point-to-point microwave to personal communications services (cellular telephones) or other bandwidth hungry innovative technologies. The Anuenue can only operate in the frequencies that remain available for microwave interconnect; these frequencies in the higher frequency 6 GHz to 8 GHz range require closer spacing between microwave repeater stations.

The Kaupulehu facility will significantly upgrade the infrastructure that supports local government communications. The Kaupulehu facility will be used by DAGS as part of the microwave system connecting other facilities on Kahua Ranch and Humuula on Hawaii, and Haleakala on Maui. In addition, the Kaupulehu facility will also be used by the County of Hawaii Police Department to connect microwave links from the Kaupulehu facility to sites at Waimea and Kahua Ranch. The land mobile radio system (LMR) antennas will provide radio coverage for the public agency users on the Kona coast.

1.3 Project Location and Conditions

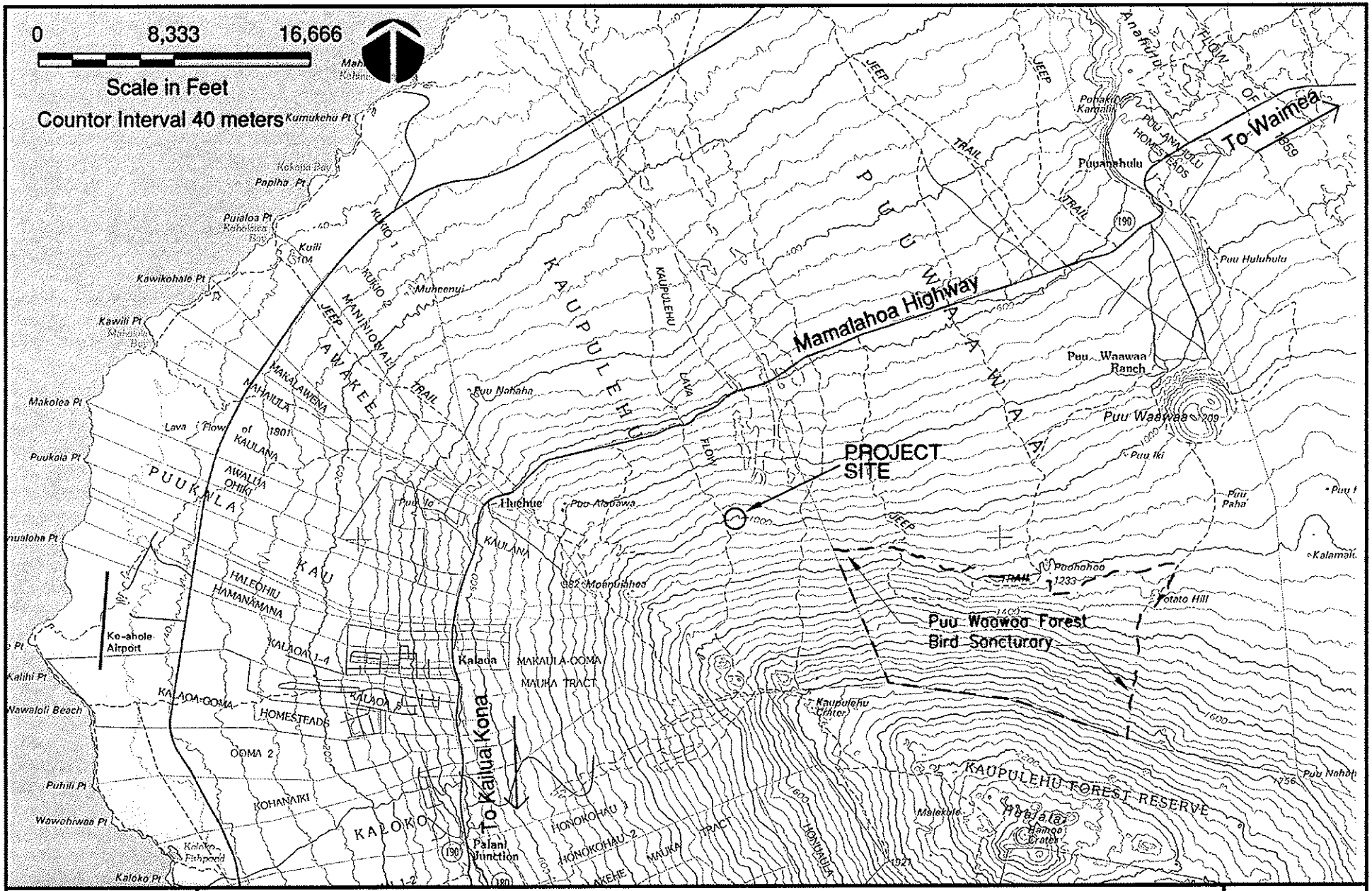
1.3.1 Project Location

The Kaupulehu project site is located in the North Kona District about 9 miles northeast of Kailua-Kona and 8 miles east of Kona International Airport at Keahole, on the northern slope of the Hualalai Volcano. The project site will occupy an area of about 28,900 square feet (0.66 acres) on the slope of Hualalai at an elevation of about 3300 feet mean sea level (msl). The project site is accessible from Mamalahoa Highway (State Route 190) via an approximately 8-10-foot wide existing 2.2 mile partially improved road that begins above the 29-mile marker and rises from the highway in the eastern direction. The access road is located within a 60-foot wide road easement and then a 40-foot wide road easement.

An existing communication facility with four towers is located within the Hawaiian Electric and Light Company (HELCO) parcel located immediately adjacent to the Kaupulehu project site. The HELCO parcel, TMK 72-2002:013, is 0.23 acres A second communication facility with a total of five towers owned by Hawaiian Telcom is located approximately 670 feet to the north and slightly east-of the Kaupulehu project site. The Hawaiian Telcom parcel, TMK: 7-2-002:009, is 2.687 acres. The remaining lands surrounding the Kaupulehu project site consist primarily of barren a'a lava fields, except for occasional patches of vegetation cover which support cattle grazing at lower elevations. Figure 1.1 shows the project location map. Figure 1.2 shows the project site map. Figure 1.3 shows the tax map. Figure 1.4 shows the project site topographic map. Figure 1.5 shows site photographs.

The project site is in a remote location within lands covered by the Kaupulehu lava flow of 1800 to 1801. Buildings of the Hualalai Ranch are located approximately 1-1/2 miles to the west. This ranch leases about 7,500 acres in the area, including the lands surrounding the project site, from B.P. Bishop Estate. The border of the Puu Waawaa Forest Bird Sanctuary begins approximately 1-1/2 miles to the southeast. Apart from the adjacent radio facilities, utility lines, and cattle grazing to the west, most of the land does not include developed uses.

The Pu'u Wa'awa'a Forest Bird Sanctuary (PWWFBS) was established by the State Board of Land and Natural Resources on October 12, 1984. Management responsibility for this parcel was transferred from the State's Land Division to its Division of Forestry and Wildlife (DOFAW) as a result of the set aside. The sanctuary was specifically created to preserve habitat for endangered forest birds, including the Hawaiian crow. It is located upslope of Pu'u Wa'awa'a Ranch, approximately 4 miles above the Mamahaloa Highway, and about 18 miles from Kailua-Kona and 22 miles from Waimea, Hawaii. The boundaries extend from 4,000 to 6,500 feet elevation and include 3,806 acres of forest bird habitat. Most of the sanctuary lies within the Conservation District (R Subzone), but approximately 800 acres on the northern boundary are zoned Agriculture.



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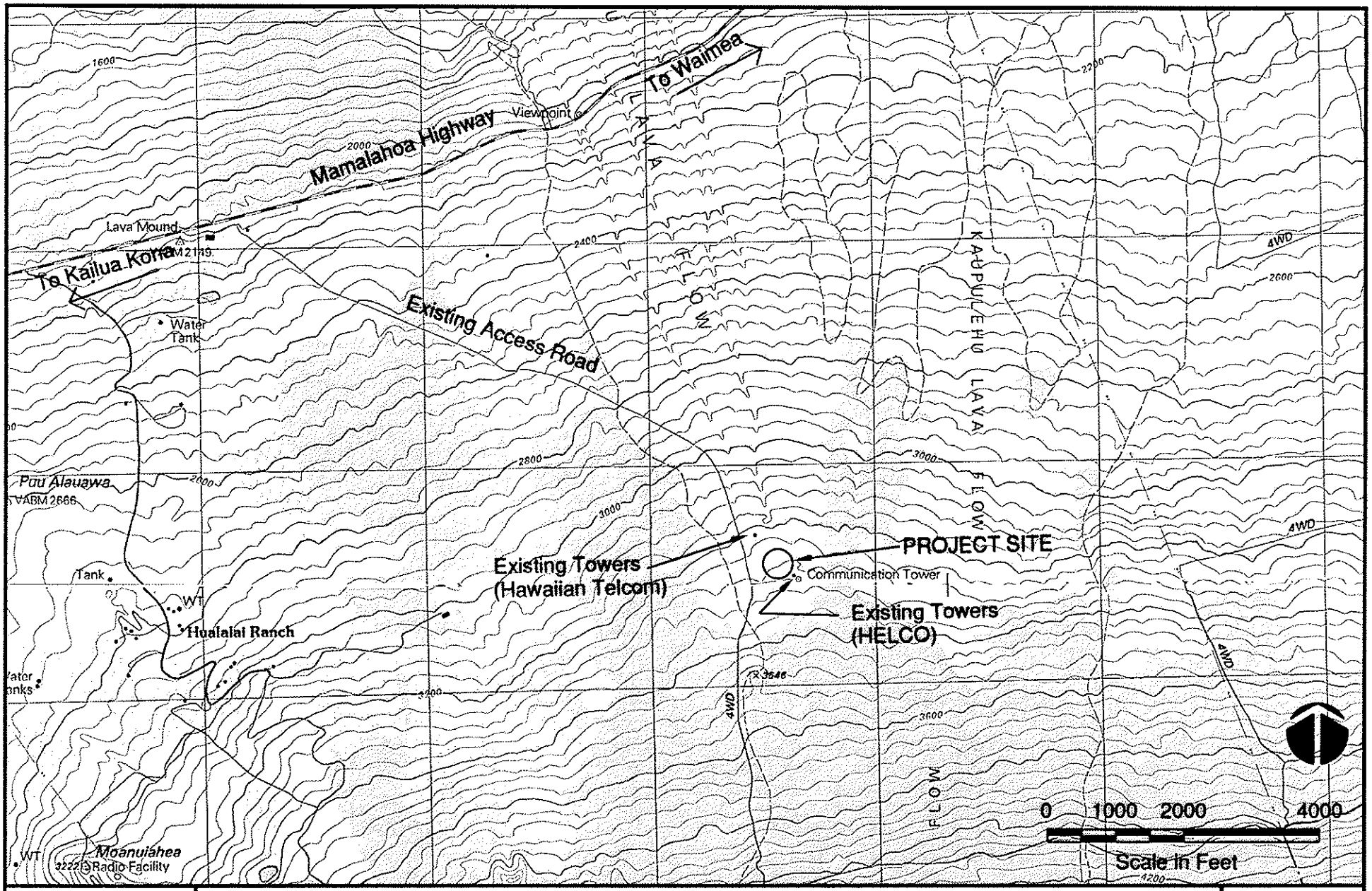
INFORMATION COMMUNICATION SERVICES DIVISION ANUENUE RADIO SITES AND TOWERS, KAUPULEHU SITE

PROJECT LOCATION MAP

FIGURE 1.1



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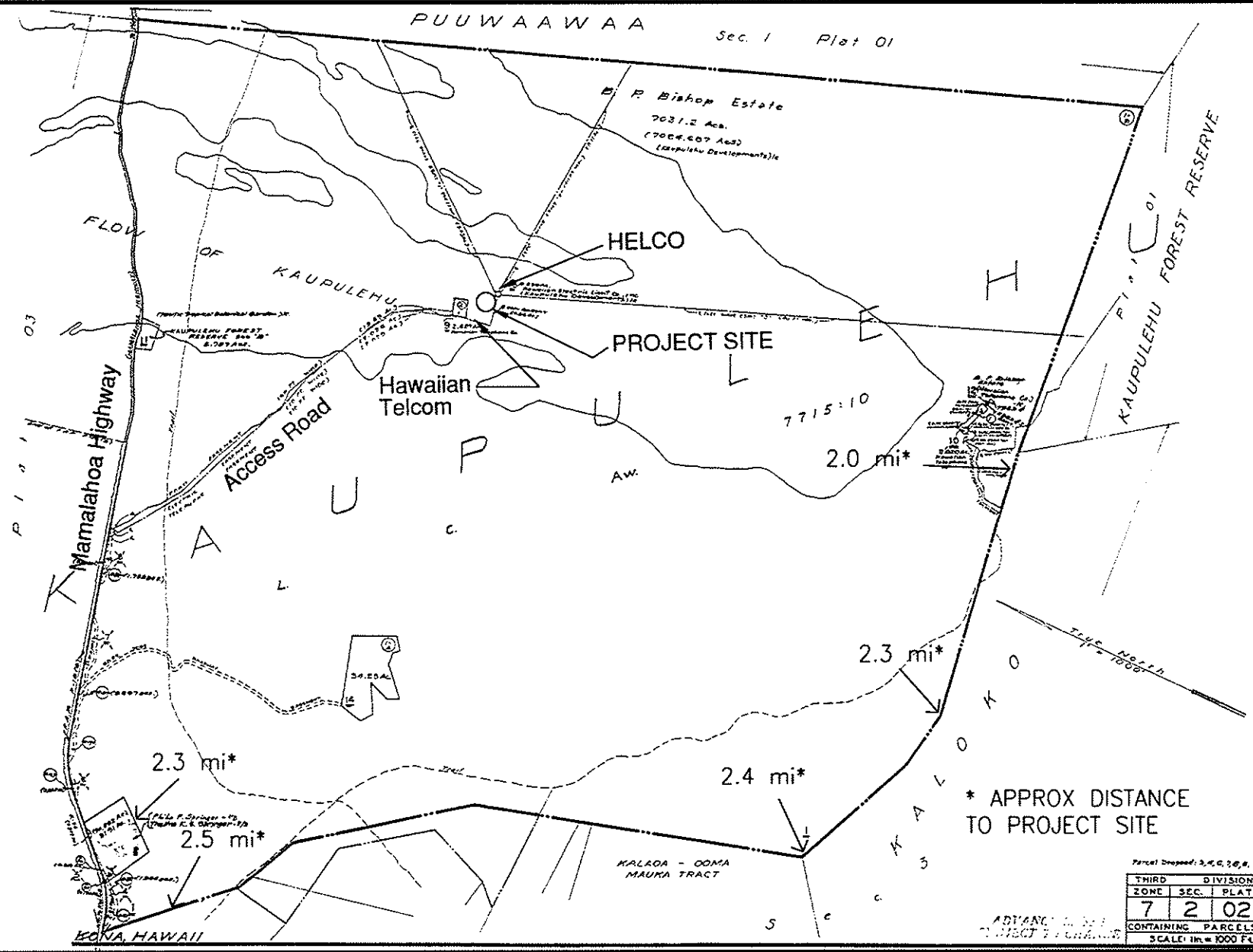
PROJECT SITE MAP

FIGURE 1.2



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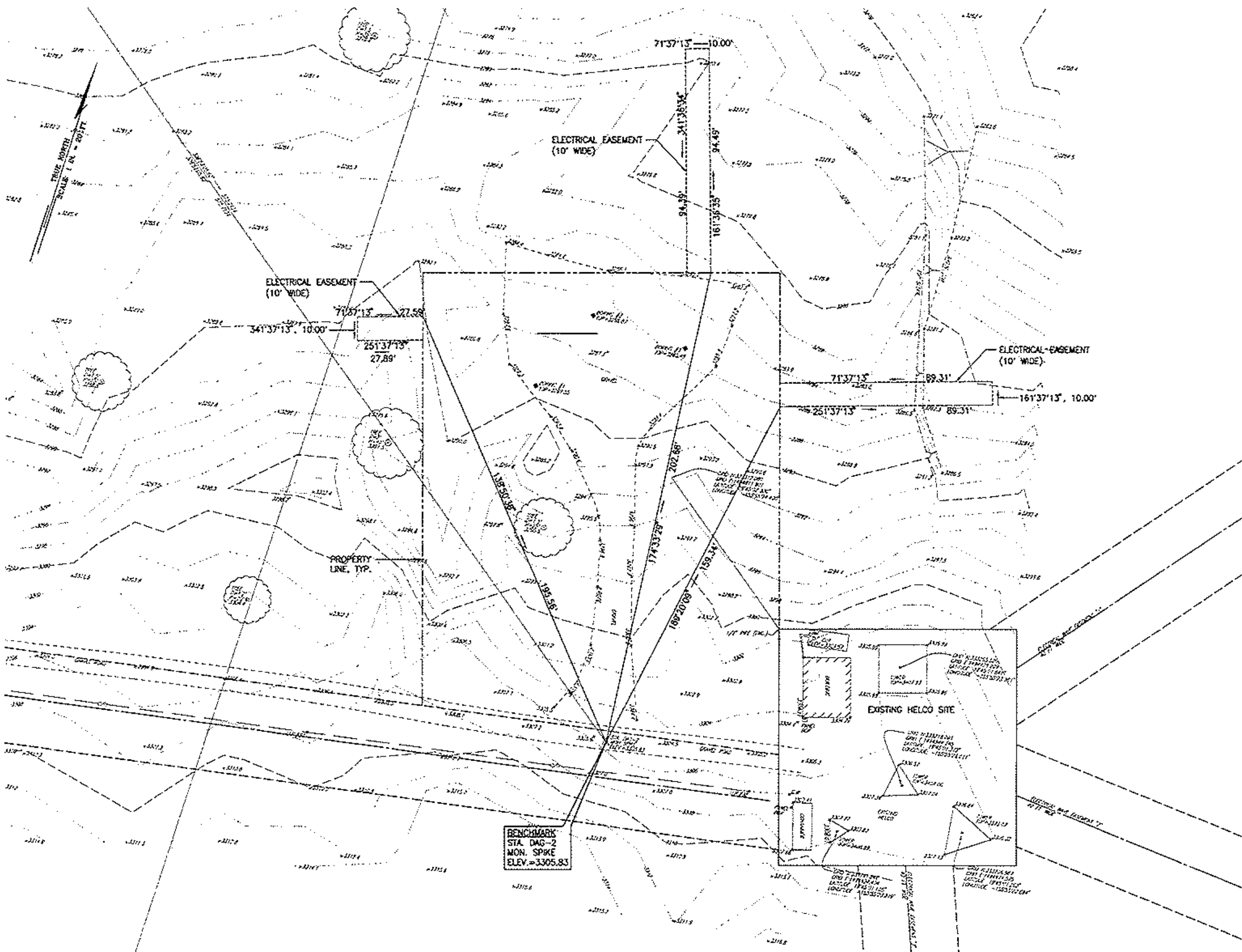
INFORMATION COMMUNICATION SERVICES DIVISION ANUENUE RADIO SITES AND TOWERS, KAUPULEHU SITE

TAX MAP KEY

FIGURE **1.3**

FIGURE 1.4



EXISTING TOPOGRAPHY

SCALE: 1"=20'

GRAPHIC SCALE

20 10 0 20 40

SCALE: 1"=20'

DEPT. OF ACCOUNTING & GENERAL SERVICES
DIVISION OF PUBLIC WORKS
STATE OF HAWAII

INFORMATION AND COMMUNICATION SERVICES DIVISION
KAUPULEHU RADIO SITE AND TOWER
KAUPULEHU, HAWAII

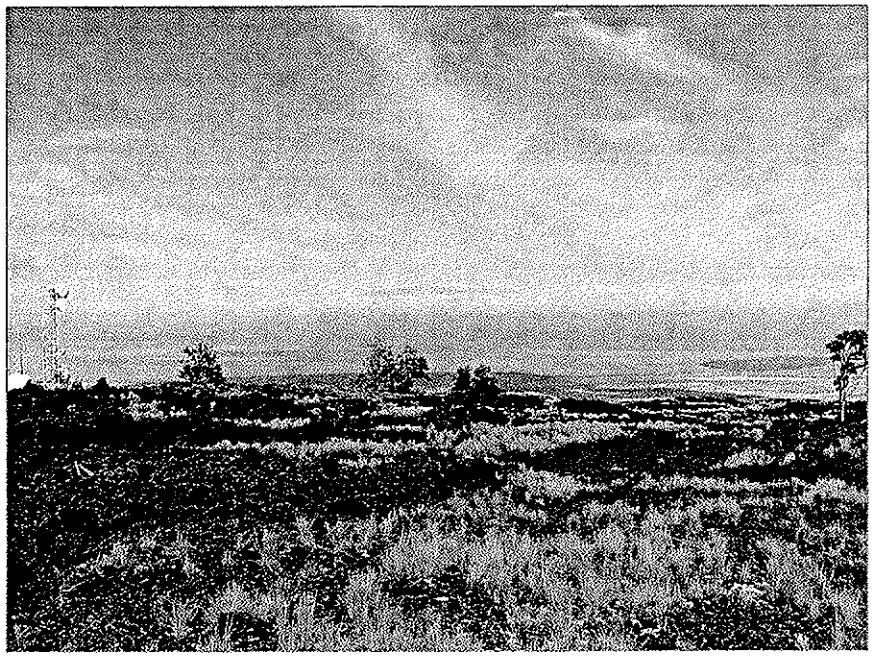
KAUPULEHU, HAWAII T.M.K. 7-2-002-001

EXISTING TOPOGRAPHY

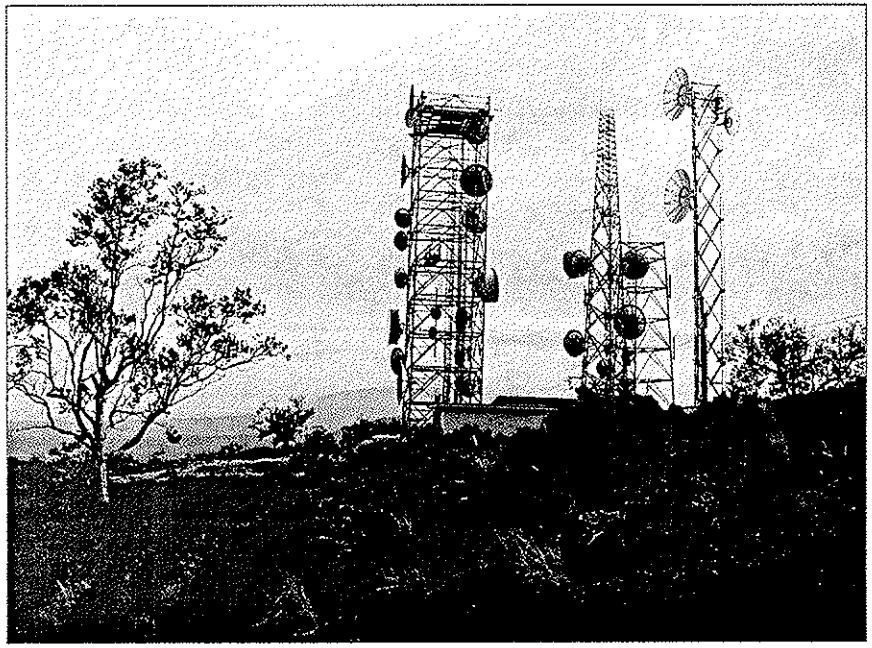
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

DESIGNED BY: RT	CHECKED BY: LO	DAGS JOB NO. 11-10-0478	DRAWING NO. C-2
DRAWN BY: MK	APPROVED BY: LO	DATE 2008-JUNE	SHEET 5
SCALE: AS NOTED			

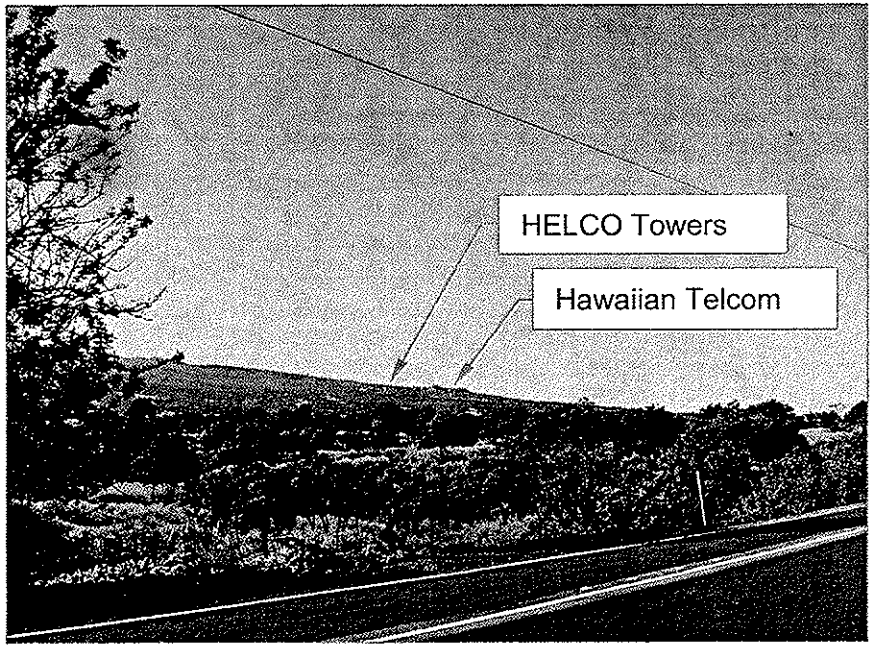
Project site looking north towards the South Kohala mountains.



Project site looking northwest - Hawaiian Telcom facility in background



Project site looking east at HELCO facility



Existing towers looking south from Mamalahoa Highway

PROJECT SITE PHOTOGRAPHS FIGURE 1.5

1.3.2 Other Communication Facilities

In November 2001, the County of Hawaii Planning Commission approved Special Permit Application (SPP 01-021) to allow continued use of the HELCO facility, which is located immediately adjacent to the Kaupulehu facility.

The HELCO telecommunications site was developed between 1973 and 1989 and has the following towers and accessory structures:

- One 100-foot tall triangular lattice tower with 6 microwave dishes and 7 antennas, including those operated by the Hawaii County Police and Fire Departments, a fuel tank located makai of the towers and equipment buildings.

- One 100-foot 4-leg lattice tower with 18 microwave dishes and associated equipment room/generator room and equipment building in the central and northwest portion of the site. The State of Hawaii telecommunication antennas are co-located on this tower.

- Sun Cablevision has a 65-foot triangular gray lattice tower with 7 microwave dishes and 1 antenna in the southeastern corner of the site, and a 20-foot guyed gray tower with 2 microwave dishes and 2 antennas in the northeastern corner of the site. Both of these towers have adjacent equipment buildings.

- GST Telecom has a 100-foot gray lattice tower with 4 microwave dishes located in the southwest corner of the project site. Accessory structures include a white trailer and white generator shed.

The 2.687-acre Hawaiian Telcom site is located approximately 670 feet to the north and slightly east of the Kaupulehu project site. The Hawaiian Telcom facility consists of a 2 100-foot lattice towers with microwave dishes, three monopoles with antennas, a dish antenna near ground level, and equipment buildings. The Hawaiian Telcom site was subdivided out of the larger B.P. Bishop Estate parcel in 1960 and uses the same 2.2 mile unpaved easement from Mamalahoa Highway.

The HELCO site, the Hawaiian Telcom site, and the Kaupulehu project site are surrounded on all sides by the 7,065 acre B.P. Bishop Estate parcel (TMK:7-2-2:1)

which is leased to Hualalai Land Corporation for ranching purposes. However, no grazing occurs at or near any of the telecommunication facilities due to the lack of vegetation.

There is an existing co-location agreement between HELCO and the State of Hawaii which allows the State to mount antennas on the tower and install equipment racks in the HELCO building. However, the agreement limits the number of antenna positions available to the State on the HELCO tower. The existing co-location agreement also limits the number of equipment racks that can be installed by the State at the HELCO facility. Regardless of the limitations imposed by that agreement, the HELCO facility has insufficient antenna positions, floor space, and backup power reserves to support the Kaupulehu systems and other future State radio systems.

1.3.3 Existing Project Site Conditions

The Kaupulehu project site is located within Tax Map Key: 7-2-002:001, a 7,065 acre parcel, and will be used under a lease agreement between the State of Hawaii and B. P. Bishop Estate, landowner of the parcel. The 28,900 square-foot project site (a rectangle about 150 feet by 190 feet) is a barren lava field with almost no vegetation cover. No buildings or other structures are located on the Kaupulehu project site. The project site slopes from south to north (mauka to makai), with an elevation change of about 15 to 18 feet. The elevation on the southern boundary is about 3300 feet mean sea level (msl) and about 3285 feet msl to 3282 feet msl at northern end. See Figure 1.4.

1.3.4 Other Project Site Data

The Kaupulehu project site is in the Agricultural District as designated by the State Land Use Commission. The upper portion of the parcel is in the Conservation District as designated by the State Land Use Commission.
The project site is designated Extensive Agricultural on the County of Hawaii General Plan Land Use Allocation Guide (LUPAG) Map.

The County of Hawaii zoning designation for the project site is Agriculture (A-20a). Hawaii County Code Chapter 25, Zoning, Division 7, Agricultural Districts, Section 25-5-72 identifies permitted uses in the Agricultural zoned lands. Under Section, 25-5-72, a, (21) shows telecommunication antennas, as permitted under Section 25-4-12. Hawaii

County Code Chapter 25, Division 2, Heights, Section 25-4-22, identifies exemptions from height limitations. The listed height limit as shown under Section 25-4-22 (d) utility poles and lines and telecommunication antennas not to exceed 500 feet from existing grade.

The Kaupulehu facility will be a public facility to be used by public agencies for public purposes. A Special Permit approved by the County of Hawaii Planning Commission will be required to construct and operate the Kaupulehu facility.

The project site is not located within the County of Hawaii Special Management Area (SMA).

1.3.5 Anuenue Kahua Ranch Site

The Kaupulehu facility will be almost identical to the DAGS Kahua Ranch site located in North Kohala, which is part of the Anuenue system. Like the proposed Kaupulehu facility, the County of Hawaii zoning designation for the Kahua Ranch site is Agriculture (A-20a). On April 2, 2004, the County of Hawaii Planning Commission approved Special Permit Application (SPP 04-002) for the Kahua Ranch site. The Kahua Ranch facility, completed in June 2005, includes a 70-foot 4-leg tower, an equipment building, and related improvements.

1.4 Project Description

1.4.1 Project Access

Access to the Kaupulehu project site will be via an existing approximately 8-10-foot wide unpaved access road which provides access to the existing HELCO and Hawaiian Telcom communication facilities. Although improved, the existing access road includes a number of spots where the paving material has deteriorated such that a vehicle with high clearance is needed to access the Kaupulehu site.

1.4.2 Project Site Plan

As previously discussed, DAGS will use the project site under an easement agreement that is being negotiated with B. P. Bishop Estate. The project site will not be subdivided

into a separate parcel. The project site will encompass rectangular area of approximately 150-feet by 190-feet, 28,900 square feet (0.66 acres) immediately adjacent to and northwest of the HELCO parcel. Figure 1.6 shows the site plan.

The HELCO site has two 40-foot wide electric wave easements that extend in the northeast and southeast directions. A third 40-foot wide easement extends almost directly south from the HELCO site. These easements are necessary to prevent the construction of structures that could interfere with or obstruct the transmitter/receiver signal. One of the principal design considerations for the Kaupulehu facility tower will be to site the tower so as to prevent radio interference with these adjacent communication facilities. See Figure 1.6.

The Kaupulehu project site will include:

1. One 150-foot tall 4-leg pipe-leg, self supported tower with a concrete mat foundation sited at about elevation 3286 feet msl;
2. 914-square foot (SF) radio equipment building, including an equipment room with related mechanical and fire protection systems, rectifier room, and emergency generator room;
3. Related site improvements, including underground electrical lines to provide power to the equipment building;
4. A site grounding system for the tower, building, and fence;
5. A 1000-gallon aboveground double-wall fuel tank;
6. 8-foot high chain link fence topped with barbed wire placed around the facilities to protect the tower and to prevent access to the building, and
7. A 115-foot long improved access driveway to connect to the existing HELCO access road located south of the project site; and

A concrete paved apron will be sited along the south (mauka) side of the building and tower to provide vehicle parking near the building entry and access to the base of the tower. The project site will be graded to direct surface runoff around the building and base of the tower.

Commercial power will be routed to the project site via underground conduits which will connect to handholes located near the base of the pole which carries the existing overhead line providing power to the adjacent HELCO facility. The commercial power will be purchased from Hawaii Electric Light Co. (HELCO).

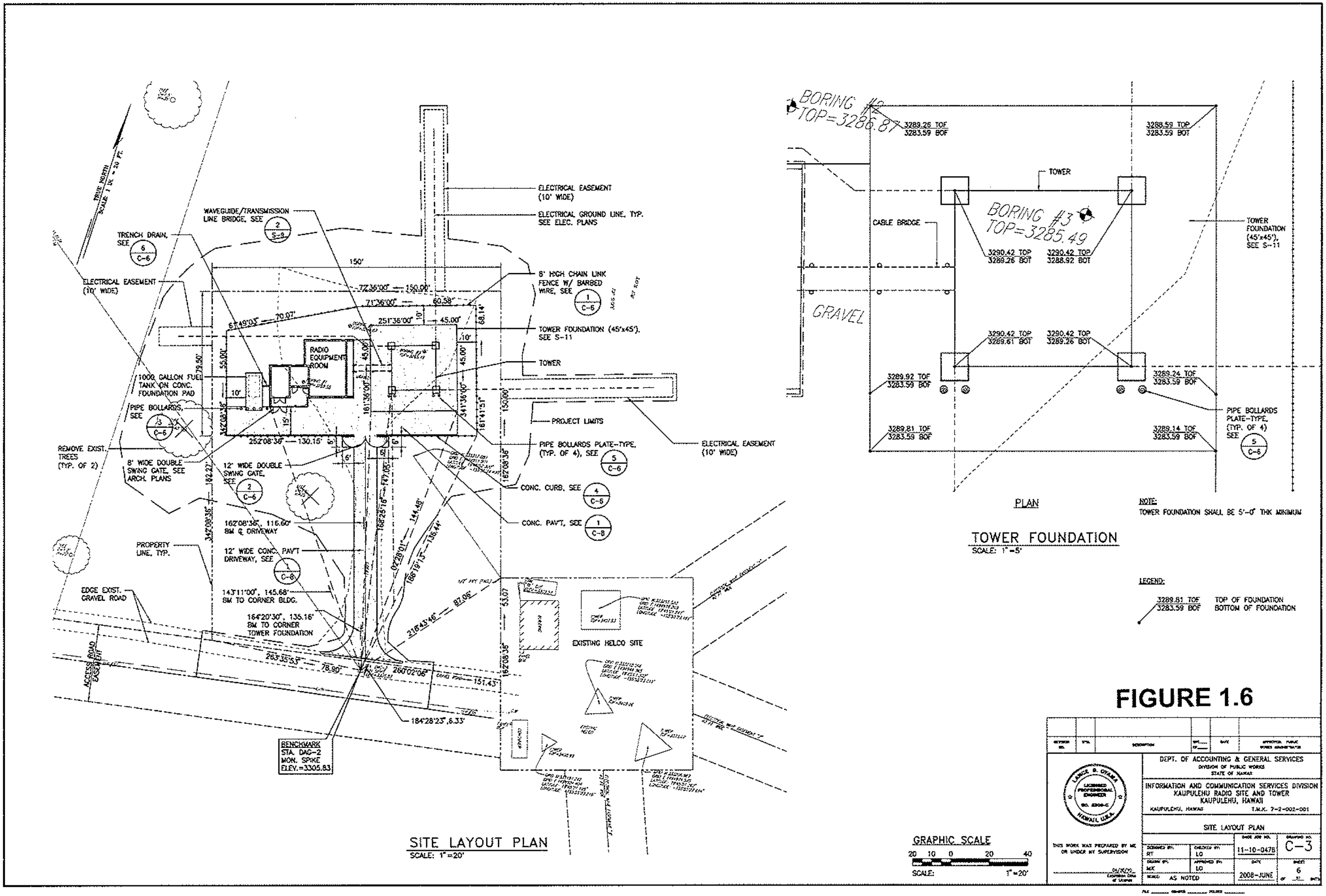

SITE LAYOUT PLAN
SCALE: 1"=20'
ELECTRICAL EASEMENT (10' WIDE)
ELECTRICAL GROUND LINE, TYP. SEE ELEC. PLANS
WAVEGUIDE/TRANSMISSION LINE BRIDGE, SEE 2 S-9
TRENCH DRAIN, SEE 6 C-6
8' HIGH CHAIN LINK FENCE W/ BARBED WIRE, SEE 1 C-6
TOWER FOUNDATION (45'x45'), SEE S-11
TOWER
RADIO EQUIPMENT ROOM
1000 GALLON FUEL TANK ON CONC. FOUNDATION PAD
PIPE BOLLARDS, SEE 5 C-6
PROJECT LIMITS
PIPE BOLLARDS PLATE-TYPE, (TYP. OF 4), SEE 5 C-6
REMOVE EXIST. TREES (TYP. OF 2)
8' WIDE DOUBLE SWING GATE, SEE ARCH. PLANS
12' WIDE DOUBLE SWING GATE, SEE 2 C-6
CONC. CURB, SEE 4 C-6
CONC. PAV'T, SEE 1 C-8
162°08'36", 116.60' BM ℄ DRIVEWAY
12' WIDE CONC. PAV'T DRIVEWAY, SEE 1 C-8
PROPERTY LINE, TYP.
143°11'00", 145.68' BM TO CORNER BLDG.
164°20'30", 135.16' BM TO CORNER TOWER FOUNDATION
EDGE EXIST. GRAVEL ROAD
ACCESS ROAD EASEMENT
EXISTING HELCO SITE
184°28'23",6.33'
BENCHMARK STA. DAG-2 MON. SPIKE ELEV.=3305.83
150'
72°36'00" 150.00'
71°36'00" 60.58'
251°36'00" 45.00'
61°49'03" 70.07'
252°08'36" 130.15'
342°08'36" 182.27'
161°36'00"
341°36'00"
161°41'51"
162°08'36"
168°25'18" 147.05'
188°19'13" 136.44'
144.48'
022°28'01"
216°43'46" 87.06'
263°35'53" 78.90'
260°02'06" 151.43'
53.07
TOWER FOUNDATION
SCALE: 1"=5'
PLAN
BORING #2 TOP=3286.87
BORING #3 TOP=3285.49
CABLE BRIDGE
GRAVEL
3289.26 TOF 3283.59 BOF
3288.59 TOP 3283.59 BOT
3290.42 TOP 3289.26 BOT
3290.42 TOP 3288.92 BOT
3290.42 TOP 3289.61 BOT
3290.42 TOP 3289.26 BOT
3289.92 TOF 3283.59 BOF
3289.24 TOF 3283.59 BOF
3289.81 TOF 3283.59 BOF
3289.14 TOF 3283.59 BOF
PIPE BOLLARDS PLATE-TYPE, (TYP. OF 4) SEE 5 C-6
NOTE:
TOWER FOUNDATION SHALL BE 5'-0" THK MINIMUM
LEGEND:
3289.81 TOF 3283.59 BOF
TOP OF FOUNDATION BOTTOM OF FOUNDATION
GRAPHIC SCALE
20 10 0 20 40
SCALE: 1"=20'
DEPT. OF ACCOUNTING & GENERAL SERVICES
DIVISION OF PUBLIC WORKS
STATE OF HAWAII
INFORMATION AND COMMUNICATION SERVICES DIVISION
KAUPULEHU RADIO SITE AND TOWER
KAUPULEHU, HAWAII
KAUPULEHU, HAWAII T.M.K. 7-2-002-001
SITE LAYOUT PLAN
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION
11-10-0478
C-3
AS NOTED
2008-JUNE
6

FIGURE 1.6

No potable water will be required at the project site.

No toilet facilities will be provided at the project site.

1.4.3 Equipment Building Plan

A three room, single story 914-square foot (SF) equipment building with 8-inch thick reinforced concrete-masonry unit (CMU) walls and concrete slab floors will be constructed on the project site to accommodate a 630-SF radio equipment room, a 114-SF battery room, and a 170-SF emergency generator room. A 3-foot wide roof overhang will be provided on the west wall to protect cable entry ports for the waveguide cables and coaxial cables which will be installed through the entry port on the wall. Figure 1.7 shows the building floor plan.

The south side of the equipment building will have a covered lanai to provide protection against wind and rain for the exterior entrances to the radio equipment and battery rooms, and the emergency generator. The entry doors will have a raised threshold to prevent water entry into the interior spaces.

The 630-SF radio equipment room will be designed with 11-foot high clear height ceiling to accommodate 8-foot tall equipment racks, overhead cable trays, and microwave waveguide and LMR coaxial cables as well as cable and waveguide support hardware. See Figure 1.8, Building Elevations. Typically, the equipment racks will be purchased and installed as part of each user agency radio installation project. Although agencies may share the space or equipment within one rack (as will be done for the Kaupulehu microwave system), typically, each agency's systems will be grouped into its own rack and/or cabinet group.

An integrated approach will be taken to protect the entire facility from the damage caused by lightning strikes. The equipment racks will be isolated from the floor, typically with treated wooden bases, as part of the effort to protect the equipment from damage caused by lighting strikes. An internal ground halo will be provided for connection of non-active metallic items such as door frames and cable racks. Surge protected entry ports will be required for all waveguide, coaxial, signal (such as telephone or similar external system connections), and electrical power connections. Protection will also

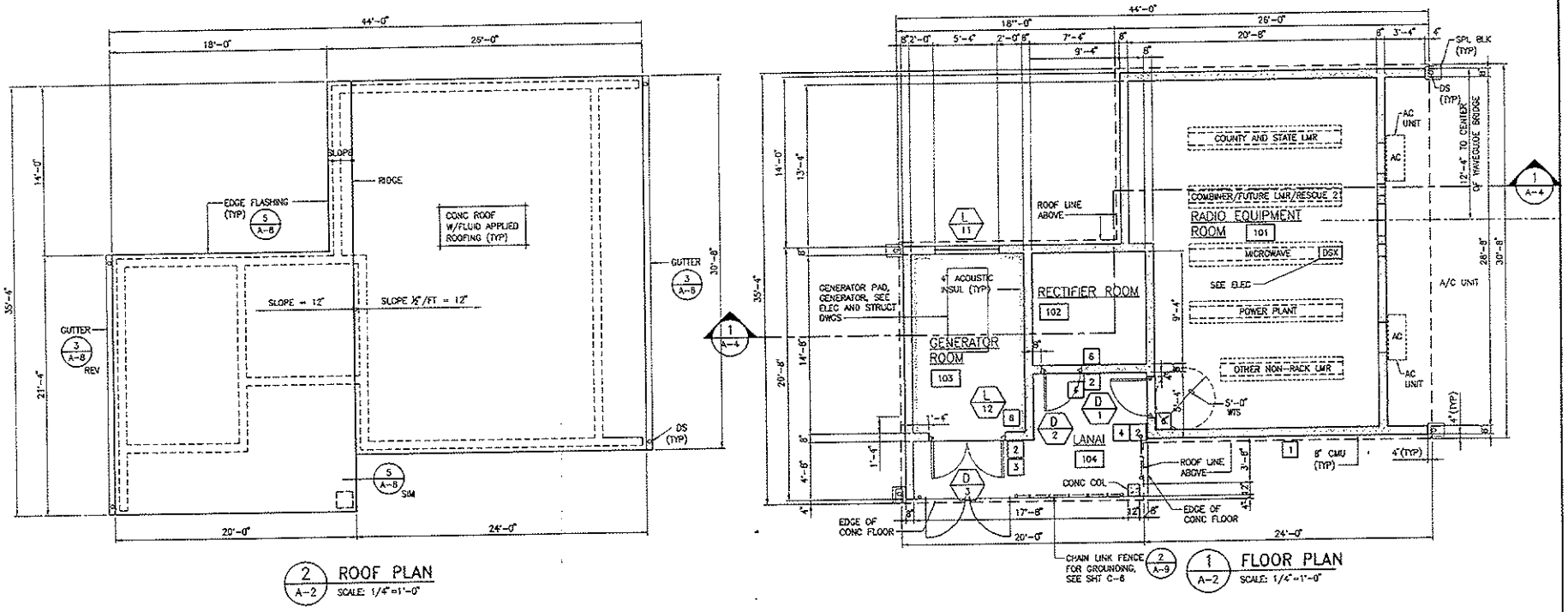


FIGURE 1.7

NOTE:
1. EQUIPMENT SHOWN ——— ARE NIC.

GRAPHIC SCALE:
4' 0 4' 8'
SCALE: 1/4"=1'-0"

DEPT. OF ACCOUNTING & GENERAL SERVICES
DIVISION OF PUBLIC WORKS
STATE OF HAWAII

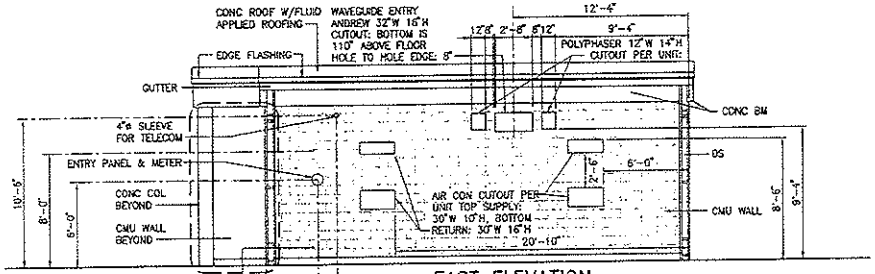
INFORMATION AND COMMUNICATION SERVICES DIVISION
KAUPULEHU RADIO SITE AND TOWER
KAUPULEHU, HAWAII
KAUPULEHU, HAWAII T.M.K. 7-2-002-021

FLOOR AND ROOF PLANS

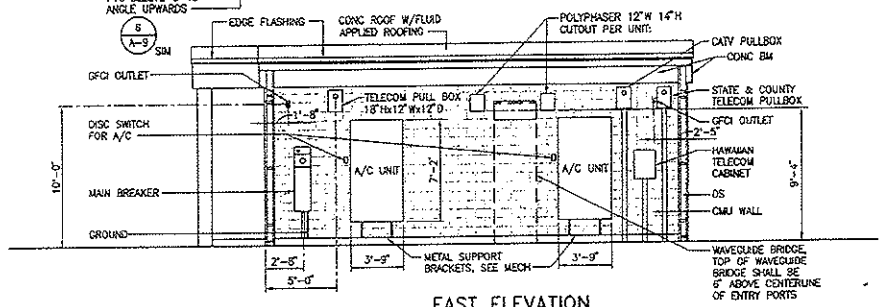
WALTER LEU LICENSED PROFESSIONAL ARCHITECT NO. 2799 HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

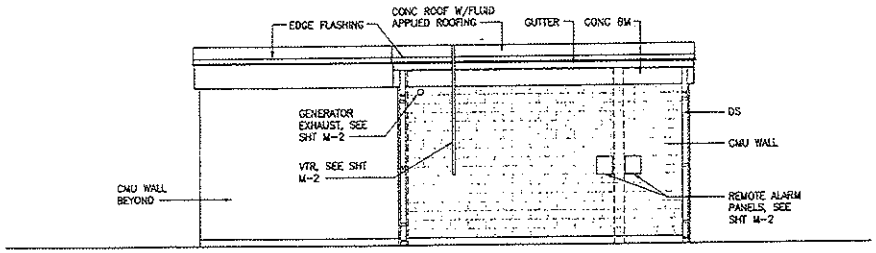
DESIGNED BY: WL | CHECKED BY: WL
DRAWN BY: WOC | APPROVED BY: WL
DATE: AS NOTED | 2008
JOB NO. 11-10-478
DRAWING NO. A-2
SHEET
OF



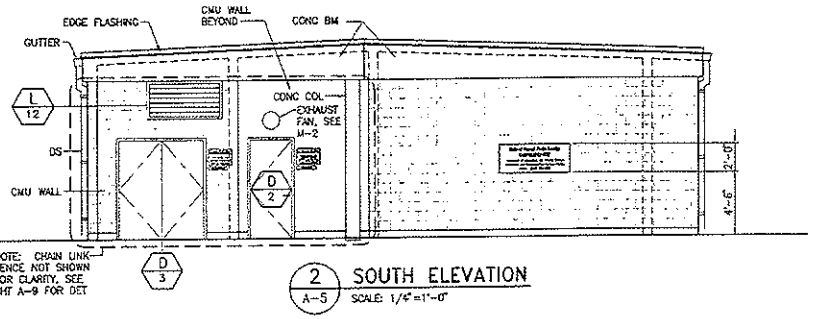
4 / A-5 EAST ELEVATION w/PENETRATIONS
SCALE: 1/4"=1'-0"



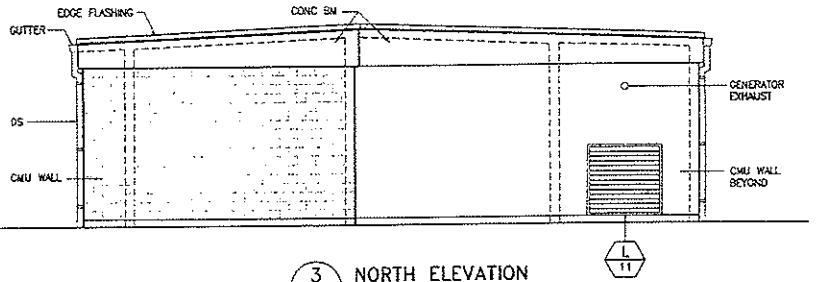
6 / A-5 EAST ELEVATION w/EQUIPMENT
SCALE: 1/4"=1'-0"



5 / A-5 WEST ELEVATION
SCALE: 1/4"=1'-0"



2 / A-5 SOUTH ELEVATION
SCALE: 1/4"=1'-0"



3 / A-5 NORTH ELEVATION
SCALE: 1/4"=1'-0"

GRAPHIC SCALE:
4' 0 4' 8'
SCALE: 1/4"=1'-0"

FIGURE 1.8

DEPT. OF ACCOUNTING & GENERAL SERVICES
DIVISION OF PUBLIC WORKS
STATE OF HAWAII

INFORMATION AND COMMUNICATION SERVICES DIVISION
KAUPULEHU RADIO SITE AND TOWER
KAUPULEHU, HAWAII
KAUPULEHU, HAWAII TMK: 7-2-002-001

EXTERIOR ELEVATIONS

WALTER LEE LICENSED PROFESSIONAL ARCHITECT No. 3708 HAWAII, U.S.A.

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

DESIGNED BY: WL	DRAWN BY: WOC
CHECKED BY: WL	APPROVED BY: WL
SCALE: AS NOTED	DATE: 2008
JOB NO. 11-10-478	DRAWING NO. A-5
SHEET — OF — SHEETS	

include the establishment of a single point ground for user equipment. The tower and the building ground systems will be interconnected to both a ground well, buried ground halos, and an exothermically welded connection to the reinforcing bars of the tower (a Ufer ground).

The ground system will include trenches with copper wire and ground rods buried in the trench which will include a layer of coke breeze as a grounding enhancement material. Coke breeze is a produced as a by-product of coke production. Coke breeze is environmentally safe, stable, and conductive when completely dry or frozen, non-moisture dependant, compactable and economical to install.

The 114-SF battery room will house several independent backup battery systems, with at least one system to support State equipment and another to support other systems. These battery systems are comprised of strings of valve regulated lead acid (VRLA) battery cells which are an improved version of the lead acid batteries found in most vehicles. However, the VRLA batteries are supplied with a gelled electrolyte, do not require water, and have been designed not to leak. The VRLA batteries will be equipped with flame arresting safety vents.

Batteries installed at similar facilities elsewhere by the State have used 48 individual cells weighing 88 pounds to make a battery that will support the site equipment for 15 hours. Such a battery contains about 920 pounds of gelled electrolyte and 3,360 pounds of lead plates. Although the VRLA cells are not classified as hazardous materials, the State will install a spill containment system.

The batteries are kept under constant charge by rectifiers that also normally provide direct current (DC) power to the critical radio equipment. The rectifiers will operate from commercial power that is backed up by an autostart generator. The use of the commercial/battery/generator redundancy is standard procedure in the telecommunications industry and at public safety facilities.

Although VRLA batteries have a projected service life of about 20 years, experience to date indicates that replacement should be scheduled at 10-year intervals. It is ICSD policy that all removed batteries be recycled, not disposed, in accordance with all federal and State environmental regulations.

The VRLA batteries will be tested, cleaned, and serviced semi-annually by contractor personnel.

The 170-square foot generator room will house a 40 kilowatt (kW) diesel generator to provide emergency power in the event of a power outage to the commercial system. The DAGS specifications require that the emergency system provide power to the facility in the event of an outage for a 7-day period. The generator will be sized to provide sufficient power for charging the batteries, running the air conditioning for the equipment room and other facility needs. See Figure 1.7.

The emergency generator will be a diesel-fuel generator. The diesel fuel will be stored in a double-walled Convault style above-ground tank. It is expected that at least a 1,000-gallon total fuel capacity will be required to provide for the desired 7-day supply of fuel. The above-ground double-walled tank will not require a spill containment system around its base. The interstitial space between the walls of the tank contains a leak detection system. The tank fill openings contain an overfill protection system to contain any spills when the tank is being filled with fuel.

The emergency generator will be tested by operating it once or twice a month for a period of about 3 to 4 hours under load test to ensure that it is operational during emergency situations. Contractor personnel will conduct the tests and maintain the emergency power system.

The building will be equipped with a building alarm system to telemeter door entry, high temperature conditions, and fire alarms. The equipment room will be equipped with a fire suppression system designed for electronic equipment. In addition, the equipment room and battery room will be equipped with hand-held fire extinguishers suitable for use in rooms with electronic equipment.
The security lighting for the equipment building will meet the County code for exterior lighting and will be downshielded to reduce the attraction of the facility for birds which might be in the area.

1.4.3.1 Tower and Building Design Criteria

The DAGS specifications require the building, tower, and antennas remain operational at wind speeds up to 110 miles per hour (mph) and the facilities survive wind speeds up

to 155 mph. Wind speeds of 110 mph are the highest sustained winds expected in a Safir-Simpson Category 2 hurricane. Wind speeds of 155 mph are the highest reached in a Safir-Simpson Category 4 hurricane.

The Kaupulehu facility tower will be designed to meet the guidelines set forth in ANSI/TIA-222-G, *Structural Standard for Antenna Supporting Structures and Antennas.* The new EIA-222-G standard is an all inclusive standard compared to the previous design standards. It replaces the EIA/TIA 222-F and earlier tower standards.

The wind speed in ANSI/TIA-222-G is now designated in 3 second gust format compared to fastest mile which had been used in the previous codes and standards. ANSI/TIA-222-G uses the speed up effect of the wind for towers built on mountain tops. This is especially significant for towers located on mountains, hills and escarpments. Depending on the steepness of the terrain the wind pressure is increased by factors greater than 1.

Wind loading is increased for the dynamic effects of the wind in the new standard. This also increases the wind pressure used in the design.

In addition to the wind speed factors, ANSI/TIA-222-G uses an "Importance Factor" load modifier for the structures. For normal communication structures it is 1.0. For structures that are classified as emergency communication structures (Structure Class III) a factor of 1.15 is specified. This increases the forces that the towers are designed for so that they have a greater ability to survive and be functional following significant wind storms or hurricanes.

1.4.4 Tower and Antennas

A 4-leg self-supporting pipe-leg, 150-foot high tower will be used to mount a total of 14 solid microwave antennas, including eight 10-foot diameter antennas. (Note, one additional antenna is shown to allow expansion.) The tower will also support other antennas including top mounted whips and side mounted smaller antennas such as directional yagis and panel antennas. A lighting rod will be mounted at the top of the tower. The tower has been sited to ensure that the microwave signals between the Kaupulehu tower and the existing State facility at Humuula will clear the antennas on the adjacent HELCO 100-foot tower.

The tower will also include work platforms, internal climbing ladders equipped with a safety climb device, ladder and trap door locks, and two waveguide ladders. A covered wave guide transmission line bridge will be used to carry the cables between the tower and the building entry ports. The tower will be factory painted a light gray shade similar to the color of the galvanized finish. Figure 1.9 shows the tower plan, and Figure 1.10 the antenna coverage plan. Table 1.1 shows the antenna plan.

It is not expected that the tower will require aircraft warning lights or markings as set forth by FAA Advisory Circular 70/7460-1H. However, a FAA Form 7460-1, Notice of Proposed Construction or Alteration will be filed by the DAGS with the FAA to obtain approvals for the location and height of the tower.

1.4.5 Site Construction

The design drawings for the Kaupelehu facility will state construction work should occur during day light hours to reduce the attraction of the facility to birds which might be in the area.

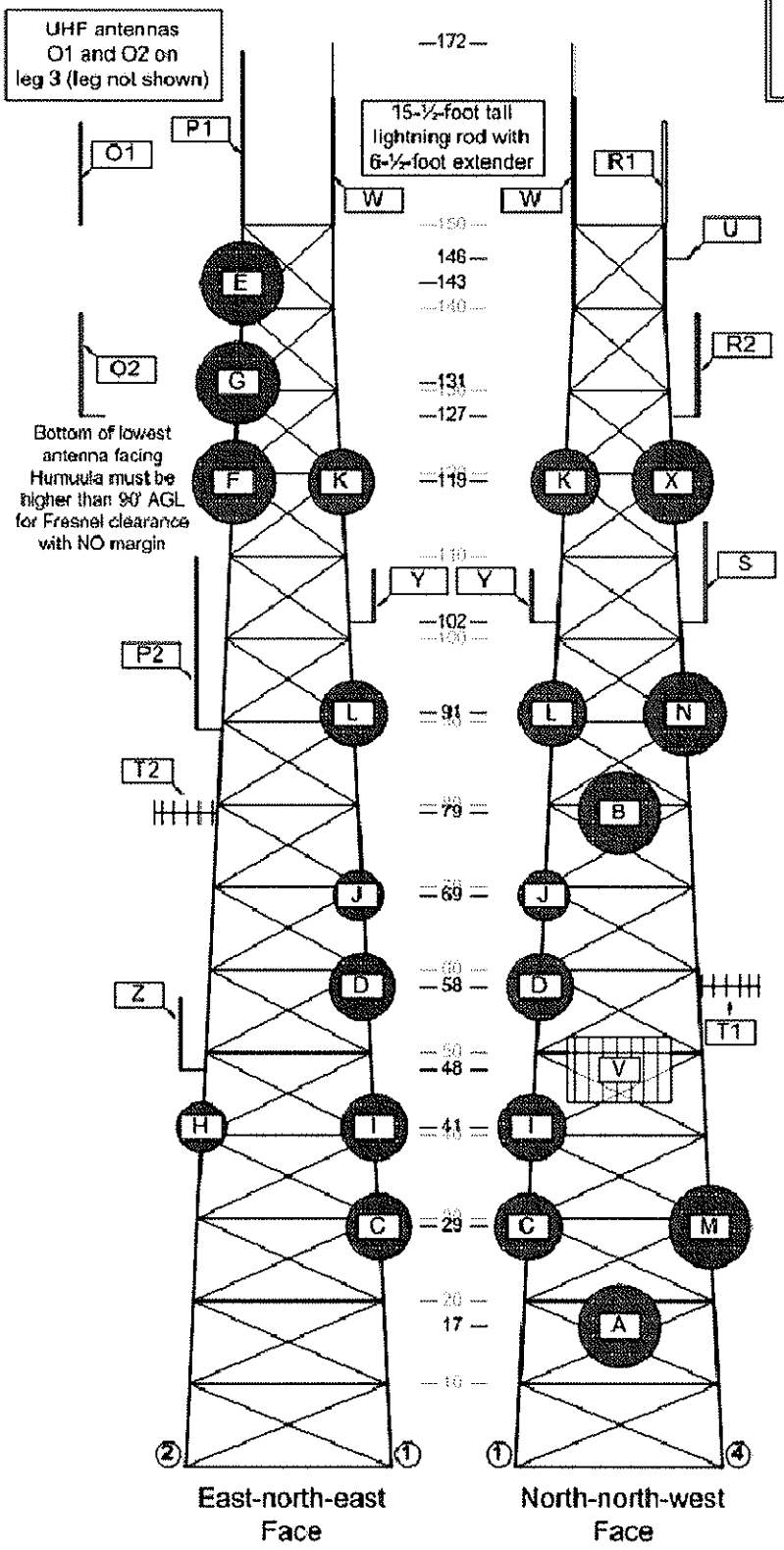
1.4.6 Electromagnetic Radiation (EMR)

The Kaupulehu facility will support multiple radio transmitters that operate in two broad categories: point-to-point microwave and land mobile radio (LMR). The new point-to-point microwave transmitters expected to be installed by both the State and the County of Hawaii will operate in the 6 GHz microwave bands. Some of the legacy systems that may be relocated to the new tower operate in the 960 MHz and 2 GHz microwave bands. These microwave systems will transmit continuously and concentrate their emission in a narrow highly directional beam that does not move. None of the energy from these microwave transmitters is expected to reach, spill, or scatter into any nearby surface areas or structures that can be accessed by people. The 6 GHz microwave transmitter output powers are typically in the range of a watt or less.

State of Hawaii Anuenue Microwave Tower at Kaupulehu, Hawaii

Revised: 1 April 2008

***Note:** Leg 1 is shown twice!*



Design Requirements

1. TIA/EIA-222-G including addendums, Class III, Seismic Zone 4, 155-mph (fastest mile) wind with NO radial ice, Exposure C, and Medium Wind Speedup.
2. 150' high, 4 leg tower, leg-to-leg spacing at base estimated to be 25', topmost 10' of legs are vertical.
3. Work platforms at 70', 110' and 140'.
4. Rest platforms at 40' and 90'.
5. Internal climbing ladder with Safety-Climb Cable.
6. Two external waveguide ladders for waveguides and coax.
7. Oversize leg bolts.
8. NNW face of tower must be perpendicular To 341.6 degree bearing.

Antennas:

A,B	Haleakala - State
C,D	Kahua Ranch - State
E,F,G	Humuula - State
H	Kaupulehu Crater - State
I,J	Kahua Ranch - CoH
K,L	Waimea - CoH
M,N	Puu Mahoe - State
O	UHF whips - State
P	VHF whips - CoH
R	700 MHz whips - State
S	800 MHz whip - State
T	UHF yagis - State
U	GPS receive antenna - State
V	VHF corner reflector - State
W	15-1/2 lightning rod, PN 806004 with extenter
X	Puu Shibai (future - State)
Y	UHF whip (future - federal)
Z	VHF whip (future - federal)

10 0 10

SCALE: 1" = 20'

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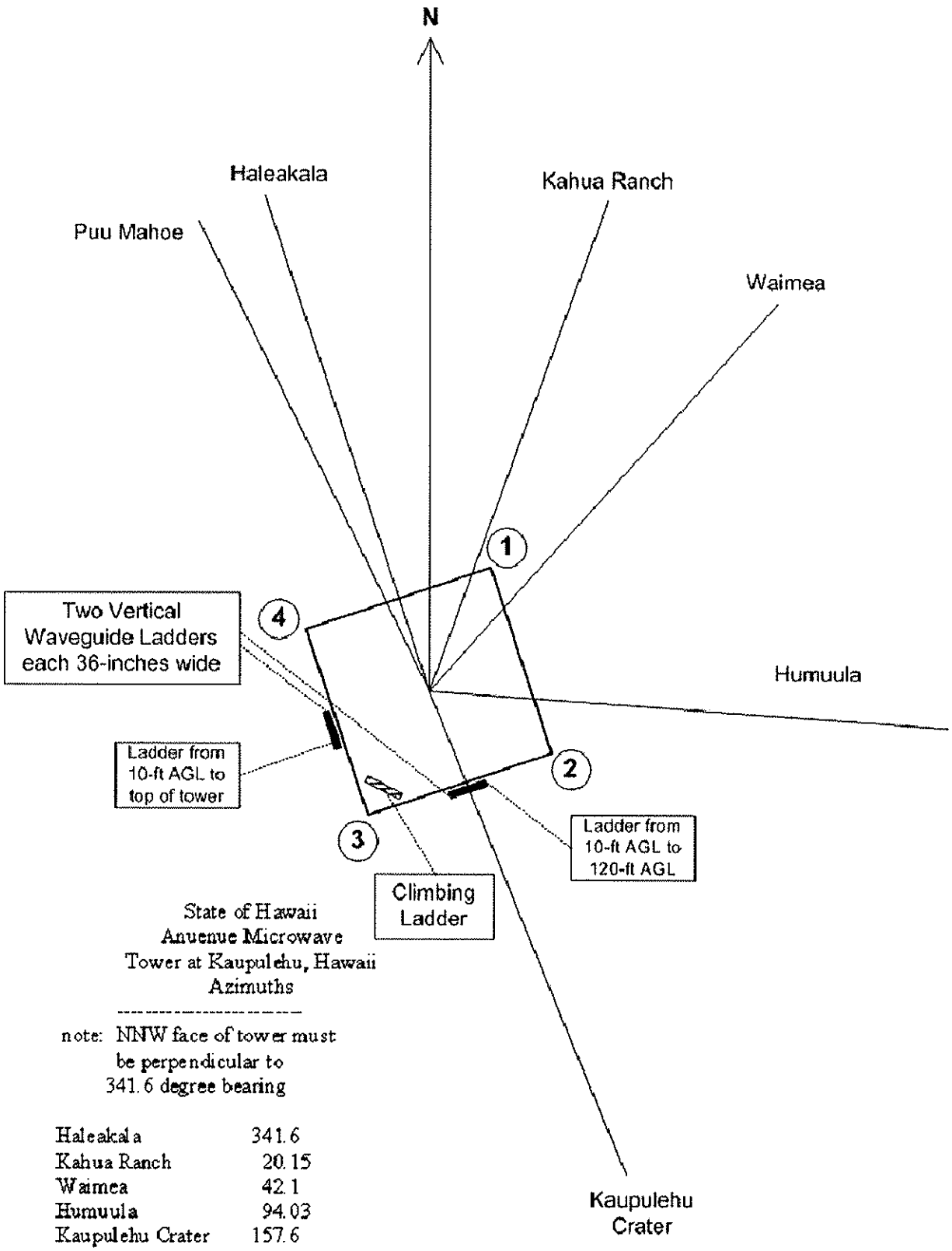
INFORMATION COMMUNCATION SERVICES DIVISION
ANUENUE RADIO SITES AND TOWERS, KAUPULEHU SITE

TOWER PLAN

FIGURE 1.9



State of Hawaii
Anuenue Microwave
Tower at Kaupulehu, Hawaii
Azimuths

note: NNW face of tower must be perpendicular to 341.6 degree bearing

Haleakala	341.6
Kahua Ranch	20.15
Waimea	42.1
Humuula	94.03
Kaupulehu Crater	157.6
Puu Mahoe	333.9

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ANUENUE RADIO SITES AND TOWERS, KAUPULEHU SITE

ANTENNA COVERAGE PLAN

FIGURE 1.10

Table 1.1
Antenna Plan

Label	Antenna Make & Model	Antenna Size & Description	Frequency Band	Leg	Elevation feet AGL	Azimuth True N	Path Direction	Owner
A	Andrew UHX10-59J	10' Diameter Solid Dish Ultra High Performance with radome	Lower 6 GHz Upper 6 GHz	FACE between 1 & 4	17	341.60	Haleakala ICSD	State ICSD HAWAIIAN UH ITS
B	Andrew UHX10-59J	10' Diameter Solid Dish Ultra High Performance with radome	Lower 6 GHz Upper 6 GHz	FACE between 1 & 4	79	341.60	Haleakala ICSD	State ICSD HAWAIIAN UH ITS
C	Andrew UHX8-59J	8' Diameter Solid Dish Ultra High Performance with radome	Lower 6 GHz	1	29	20.15	Kahua Ranch	State ICSD ANUENUE
D	Andrew UHX8-59J	8' Diameter Solid Dish Ultra High Performance with radome	Lower 6 GHz	1	58	20.15	Kahua Ranch	State ICSD ANUENUE
E	Andrew UHX10-59J	10' Diameter Solid Dish Ultra High Performance with radome	Lower 6 GHz	2	143	94.03	Humuula	State ICSD ANUENUE
F	Andrew UHX10-59J	10' Diameter Solid Dish Ultra High Performance with radome	Lower 6 GHz	2	119	94.03	Humuula	State ICSD HAWAIIAN UH ITS
G	Andrew UHX10-59J	10' Diameter Solid Dish Ultra High Performance with radome	Lower 6 GHz Upper 6 GHz	2	131	94.03	Humuula	State ICSD ANUENUE
H	Andrew UHX6-107J	6' Diameter Solid Dish Ultra High Performance with radome	11 GHz	2	41	341.60	Kaupulehu Crater	State ICSD HAWAIIAN UH ITS
I	Andrew PLX8-59	8' Diameter Solid Dish with radome	Lower 6 GHz	1	41	20.15	Kahua Ranch	County of Hawaii
J	Andrew PL6-59J	6' Diameter Solid Dish with radome	Lower 6 GHz	1	69	20.15	Kahua Ranch	County of Hawaii
K	Andrew PLX8-59	8' Diameter Solid Dish with radome	Lower 6 GHz	1	119	42.10	Waimea PS	County of Hawaii

Table 1.1
Antenna Plan (continued)

Label	Antenna Make & Model	Antenna Size & Description	Frequency Band	Leg	Elevation feet AGL)	Azimuth True N	Path Direction	Owner
L	Andrew PL\X8-59	8' Diameter Solid Dish with radome	Lower 6 GHz	1	91	42.10	Waimea PS	County of Hawaii
M	Andrew UHX10-59J	10' Diameter Solid Dish Ultra High Performance with radome	Lower 6 GHz Upper 6 GHz	4	29	333.90	Puu Mahoe	State ICSD future
N	Andrew UHX10-59J	10' Diameter Solid Dish Ultra High Performance with radome	Lower 6 GHzUpper 6 GHz	4	91	333.90	Puu Mahoe	State ICSDfuture
O1	Sinclair SC381-HF2-LDF	UHF omni whip (pole) 148" tall, 4.5" diameter	403 MHz - 470 MHz	3	150 TOP		omni	State ICSD
O2	Sinclair SC381-HF2-LDF	UHF omni whip (pole) 148" tall, 4.5" diameter	403 MHz - 470 MHz	3	127		omni	State ICSD
P1	Sinclair SC281-SF2LDF	VHF omni (whip) antenna 252" tall, 5" diameter	138 MHz - 158 MHz	2	150 TOP		omni	County of Hawaii
P2	Sinclair SC281-SF2LDF	VHF omni (whip) antenna 252" tall, 5" diameter	138 MHz - 158 MHz	2	91		omni	County of Hawaii
Q	Designator NOT used							
R1	TxRx 101-83B-09-0-03	700 MHz omni whip (pole) 10' tall, 4" diameter	764 MHz - 806 MHz	4	150 TOP		omni	State ICSD
R2	TxRx 101-83B-09-0-03	700 MHz omni whip (pole) 10' tall, 4" diameter	764 MHz - 806 MHz	4	127		omni	State ICSD
S	Andrew DB809KE-XT	800 MHz omni whip (pole) 147" tall, 3" diameter	806 MHz - 869 MHz	4	102		omni	State ICSD

Table 1.1
Antenna Plan (continued)

Label	Antenna Make & Model	Antenna Size & Description	Frequency Band	Leg	Elevation feet AGL)	Azimuth True N	Path Direction	Owner
T1	Andrew DB436- C	UHF Yagi 10 dBd 60° horiz beamwidth	450 MHz – 470 MHz	4	58	300.00		State ICSD
T2	Andrew DB436- C	UHF Yagi 10 dBd 60° horiz beamwidth	450 MHz – 470 MHz	2	79	120.00		State ICSD
U	Maxrad GPS-TMG-SP-40N	GPS Timing Reference Receive Only with Lightning Protection	1575.42 +/- 10 MHz	4	146		omni	State ICSD
V	Sinclair SV228-SF2SNM	VHF Corner Reflector 10 dBd gain	148 MHz - 174 MHz	FACE between 1 & 4	48	341.60	Haleakala ICSD	State ICSD
W	Valmont/Microflect Galvanized Lightning Rod	22' Overall height galvanized metal pipe and lightning rod	DC – light	1	150TOP		omni	State ICSD
X	Andrew UHX10-59J	10' Diameter Solid Dish Ultra High Performance with radome	Lower 6 GHz Upper 6 GHz	4	119	300.00	Puu Shibai	State ICSD
Y	Sinclair SC323-L	UHF omni whip (pole) 76" tall	Federal UHF	1	102		omni	Future Federal
Z	RFS Celwave BA1312-2	VHF omni (whip) antenna 8.6' tall	Federal VHF	2	48		omni	Future Federal
	Waveguide Ladder 36-inch wide	30-inch vertical spacing rung-to-rung		FACE between 3 & 4	10' to 150' AGL (top)			
	Waveguide Ladder 36-inch wide	30-inch vertical spacing rung-to-rung		FACE between 2 & 3	10' to 120' AGL			

The LMR systems expected to be installed at the Kaupulehu site will operate on frequencies that range from just above 100 MHz to just under 900 MHz. LMR systems transmit intermittently with their duty cycles related to system traffic. A typical LMR system would have a transmitter output power of 100 watts (or less) and transmit in an omni-directional (or wide sector) pattern with energy concentrated downhill or towards the horizon.

1.5 Project Operation

1.5.1 Personnel

No government or contractor personnel will be assigned to daily operation of the Kaupulehu facility. However, as previously discussed, contractor personnel will visit the project site on a periodic basis to conduct tests and to perform maintenance service on air-conditioning and power systems and to clean the building and surrounding area. The radio equipment and battery will be serviced at least twice per year by contractor personnel from separate companies with technicians responding intermittently as needed to equipment failures. Technician visits typically would not exceed twenty man-days per year per system (or agency). In total, about 10 to 20 trips/month will be made by contractor personnel to the Kaupulehu facility.

1.5.2 Hours of Operation

The radio equipment will operate continuously on a 24 hours per day, 7 days per week basis.

1.6 Preliminary Cost Estimate

The budgeted construction cost, excluding the equipment, for the Kaupulehu facility is approximately $3,000,000 which will be funded by DAGS.

1.7 Project Schedule

Construction is expected to start in February 2009 and should require about 10 to 12 months to complete. Antenna and equipment installation and testing will commence in January 2010. The facility should be in operation by April 2010.

1.8 Other Project Considerations

During the pre-assessment consultation for this EA with federal, state and county agencies, the state Office of Civil Defense indicated it supports the planned development of the Information & Communication Services Division-Kaupulehu Radio Site and Tower at the Kaupulehu project site. The Office of Civil Defense also noted the Kaupulehu project supports the critical connectivity needs of Emergency Management and Homeland Security statewide and the Kaupulehu project is essential to the modernization efforts for the State to support emergency communication needs.

The County of Hawaii Police Department also indicated support for the project and looks forward to sharing the facility.

2. DESCRIPTION of EXISTING ENVIRONMENT, IMPACTS and MITIGATION MEASURES

2.1 Geology and Soils

2.1.1 Existing Environment

The project site is located on the northwestern flank of Hualalai, the westernmost of the five major volcanoes that make up the island of Hawaii. Hualalai is the third youngest and the third-most historically active volcano on the island. Six different vents on Hualalai erupted lava between the late 1700s and 1801, two of which generated lava flows that poured into the sea on the west coast of the island. These flows are identified on the US Geological Survey topographic map as "Kaupulehu Lava Flow". See Figure 1.1 and 1.2.

The U.S. Department of the Interior Geological Survey classifies the area that includes the project site as Lava Flow Hazard Zone 4, on a scale of ascending risk from 9 to 1. Zone 4 includes all of Hualalai, where the frequency of eruptions is lower than on Kilauea and Mauna Loa. Less than 15 percent of Zone 4 has been covered with lava flows in the past 750 years.

The Kaupulehu lava flow of 1800 to 1801 is known to contain an abundance of xenoliths, which are foreign rock fragments that become embedded in larger rock during its formation. Xenoliths of dunite, peridotite and gabbro are commonly found within Kaupulehu lava flows. Soil borings taken in February 2008 at the Kaupulehu project site for geotechnical engineering purposes encountered some xenoliths at depths ranging from about 10 to 21 feet below the ground surface.

In most areas of the world, earthquakes are caused by shift in the tectonic plates. In contrast, earthquakes in Hawaii are primarily linked to volcanic activity. Earthquake activity in Hawaii generally occurs before or during volcanic eruptions or from underground movement of magma that comes close to the surface without an actual eruption to the surface.

On the island of Hawaii, earthquakes directly associated with the movement of magma are concentrated beneath the active Kilauea and Mauna Loa Volcanoes. Typically, the

risk of seismic activity and degree of ground movement decreases with the distance from these active volcanoes. The several significant earthquakes, greater than Magnitude 6, have occurred on the west side of the island, including the recent one on October 15, 2006. Based on the geotechnical investigation of the project site conducted in February 2008, the project site does not appear to be located in the immediate proximity of mapped geologic fault structures.

The County of Hawaii is assigned seismic Zone 4 in the 1997 Uniform Building Code (UBC), the zone with the most stringent building structural requirements. Seismic Zone 4 is also assigned to the coastal areas of California. Originally enacted in 1927, the UBC was developed by the International Code of Building Officials to guide construction of buildings, structures, and facilities throughout the U.S. The State of Hawaii and the counties in state, including the County of Hawaii, have adopted the UBC as the applicable code for constructing buildings, structures, and facilities. The County of Hawaii uses the 1991 UBC, except for the seismic zone assignment.

The purpose of the seismic provisions in the UBC is primarily to safeguard against major structural failures and loss of life, not to limit damage or maintain functions. Structures are to be designed and constructed at a minimum to resist the effects of ground motions from seismic events. The site seismic hazard characteristics in the UBC are based on the seismic zone and proximity of the site to active seismic sources.

The Soil Survey of the Island of Hawaii prepared by the U.S. Department of Agriculture Soil Conservation Service (now Natural Resources Conservation Service) shows the soils of the project site to be designated as Lava Flows, A'a (rLV). This soil is described as follows: " . . . this lava has practically no soil covering and is bare of vegetation, except for mosses, lichens, ferns, and a few small ohia trees . . . it is a mass of clinkery, hard glassy, sharp pieces piled in tumbled heaps."

The geotechnical soil borings show the project site is generally underlain by interbedded layers of clinker (a'a basalt) and dense basalt (paheohoe basalt) extending down to maximum depth explored of about 49.5 feet below the ground surface. Clinker materials generally consisted of medium dense gravel and cobbles. The dense basalt formations encountered below the surface fills were generally very hard and relatively unweathered to slightly weathered. Cavities and or/voids are common the basaltic lava flows and should be expected at the Kaupulehu facility project site.

2.1.2 Impacts and Mitigation Measures

Construction of the radio building and tower will require subsurface excavation for placement of the foundations and footings for the tower and building. This will disturb surface and subsurface soils and displace the soils with on-grade slab foundations which will be placed on the surface of the surrounding the tower and building. However, this disturbance will not adversely affect the soils and geology of the project site and surrounding area. Temporary erosion control measures will be used during construction to prevent soil loss. These mitigation measures will include erection of a silt fence to minimize surface runoff into adjacent areas. These measures will contain loose soil material within the project site to the extent possible during the construction period.

The Kaupulehu facility will be designed and constructed to meet the requirements in the applicable UBC. This will ensure that the Kaupulehu facility can meet the seismic loadings established for Zone 4. This will ensure that the geological conditions at the project site do not adversely affect the building and facilities.

2.2 Water Resources and Flood Hazard

2.2.1 Existing Environment

The project site is located on the slopes of Hualalai at an elevation of about 3,285 feet mean sea level (msl), within an area composed of a'a lava flows. The U.S. Department of the Interior Geological Survey (USGS) topographic map shows there are no surface water resources on or near the project site. The isohyetal map of the island of Hawaii indicates that rainfall at the project site varies between 20 to 40 inches per year.

The Federal Emergency Management Flood Insurance Rate Map Community Panel 155166INDOA, map revised, April 2, 2004 shows the project site area is in Zone X, an area determined to be outside the 500-year floodplain. Thus, the project site is not subject to flooding.

The State of Hawaii Department of Land and Natural Resources Engineering Division has indicated the National Flood Insurance Program does not have any regulations for developments in Zone X. See Appendix A.

2.2.2 Impacts and Mitigation Measures

There are no surface water sources on the project site. There will be no discharges from the project site directed to waters of the U.S. or waters of the State of Hawaii. The Kaupulehu project does not involve placement of dredged and/or fill material into waters of the U.S. A Department of the Army (DA) permit will not be required under Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act, 33 USC 1344.

The Kaupulehu project site will be graded to construct the radio building and tower foundation. The project site will be sloped to direct surface flow from rainfall away from the entrances to building.

The construction plans and specifications for the Kaupulehu project will include best management practices (BMPs) to minimize erosion on the project site during and after construction and will also include measures to contain runoff on-site during the construction period.

2.3 Agricultural Lands

2.3.1 Existing Conditions

The Kaupulehu project site occupies an area of about 0.66 acres of barren lava field with limited vegetation cover. Although the lands surrounding the project site are leased by Hualalai Ranch, the lack of vegetation makes the Kaupulehu project site and adjacent areas unsuitable for grazing or other agricultural activity. The cattle grazing which does occur can be found at lower elevations closer to Mamalahoa Highway.

In 1975, the U.S. Department of Agriculture Soil Conservation Service (now Natural Resources Conservation Service) initiated a nationwide inventory of important farmlands. When completed, the inventory included three categories "prime", "unique", and "other farmlands of state-wide and local importance". This classification was later adopted by the State of Hawaii Department of Agriculture under the title "Agricultural Lands of Importance to the State of Hawaii" (ALISH).

The ALISH system defines "prime agricultural land" as the best suited for food, forage, and timber crops. "Unique agricultural land" is defined as land other than prime, used for the production of high-value food crops. "Other agricultural land" is defined as land used for the production of food, feed, fiber and forage crops, but not classified as "prime" or "unique".

According to the ALISH system, the project site is unclassified, indicating that the lands are not suitable for agriculture.

The Detailed Land Classification – Island of Hawaii, published by the University of Hawaii Land Study Bureau (LSB), evaluates the quality or productive capacity of certain lands on the island for selected crops and overall suitability to agricultural use. A five-class productivity rating system was established with "A" representing the class of highest productivity and "E" the lowest. Under this system, the project site is rated "E" or Very poor.

2.3.2 Impacts and Mitigation Measures

Based on the limited soil cover, the LSB ratings of "E" or Very poor, and the ALISH rating of "unclassified", use of the Kaupulehu project site for a telecommunications facility would have not have an adverse impact on the availability of agricultural land in the State of Hawaii.

2.4 Hazardous Waste

2.4.1 Existing Environment

The lands surrounding the Kaupulehu project site has been used for cattle grazing by Kaupulehu since the late 1920's, or for over for almost 75 years. The Kaupulehu project site shows no evidence of structures, buildings, facilities, or underground storage tanks (USTs) which might contain hazardous materials.

2.4.2 Impacts and Mitigation Measures

The Kaupulehu facility will contain valve regulated lead acid (VRLA) batteries which will generate a direct current (DC) power source for the microwave repeaters and the land

mobile repeaters. The batteries will not require water and will be equipped with flame arresting safety vents. The VRLA batteries are not classified as hazardous materials and will be mounted over a spill containment system. Thus, the VRLA batteries should not adversely affect the environment of the project site and nearby areas.

The emergency generator will use diesel fuel which will be stored in an above-ground double-walled, concrete encased tank such as those manufactured by Convault. A leak from the inner tanks would be contained in the interstitial space between the walls of the tank. These types of tanks are equipped with a monitor system to detect leaks in the interstitial space between the walls of the tank. It is expected that at least a 1000-gallon total fuel capacity will be required to provide for the desired 7-day supply of fuel. According to the U.S. Environmental Protection Agency (EPA), an above-ground double-walled concrete tank will not require a secondary spill containment system around its base.

The fill pipe will be provided with two or more of the following methods to protect them against overfill. These include: a) direct reading level gauge at the tank which is visible from fill pipe location; b) valve located within fill-pipe access to close automatically at a specified fill level; c) audible high level alarm activated by a float switch at a specified fill level. These measures will protect against spills from overfilling when the tank is being filled with fuel.

The County of Hawaii Fire Department has allowed use of above-ground fuel storage tanks, including at the recently completed DAGS Kahua Ranch site.

2.5 Biological Resources

2.5.1 Existing Environment

Flora

Soil on the project site consists of uneven weathered a'a lava, with little or no soil cover. Due to these conditions, there is very little vegetation present on the project site. In April 2008, during the Biological Surveys, plant species noted on the project site consisted of a total of seven flowering plants and two ferns. Of these, only two species are native, ohia tree (*Metrosideros polymorpha)* and uhaloa (*Waltheria indica).* The

remaining five species are considered to be alien to the Hawaiian Islands. All plants were seen in extremely small numbers with the exception of fountain grass (*Pennisetum setaceum*) and air plant (*Kalanchoe pinnata*). No listed or candidate threatened or endangered botanical species as set forth by the U.S. Department of the Interior Fish and Wildlife Service (USFWS) were found on the project site. See Appendix B.

Fauna-Avian

During the Pre-Assessment comment process for this Draft EA, the US Department of Interior Fish and Wildlife Service (USFWS) replied that a search of their files compiled by the Hawaii Biodiversity and Mapping Program indicated three listed endangered species (endangered Hawaiian hoary bat, Hawaiian goose, Hawaiian hawk) have been observed in the area of the project site. The USFWS also stated three seabird species, (endangered Hawaiian petrel, threatened Newell's shearwater, and candidate Band-rumped storm-pertel) may use the area of the project site while transiting to nesting colonies. See Appendix A for the USFWS letter.

The Pu'u Wa'awa'a Forest Bird Sanctuary (PWWFBS) was established by the State Board of Land and Natural Resources on October 12, 1984. Management responsibility for this parcel was transferred from the State's Land Division to its Division of Forestry and Wildlife (DOFAW) as a result of the set aside. The sanctuary was specifically created to preserve habitat for endangered forest birds, including the Hawaiian crow. It is located upslope of Pu'u Wa'awa'a Ranch, approximately 4 miles above the Mamahaloa Highway, and about 18 miles from Kailua-Kona and 22 miles from Waimea, Hawaii. The boundaries extend from 4,000 to 6,500 feet elevation and include 3,806 acres designated as the forest bird sanctuary. The western boundary of the forest bird sanctuary lies about 1.1 miles east of the project site and about 100 feet above of the project site. See Figure 1.1.

In April 2008, a Biological Survey was conducted on the project site to determine the presence of USFWS or State of Hawaii Department of Land and Natural Resources (DLNR) listed or candidate threatened or endangered avian species. The survey also examined the presence of species on nearby areas and an assessment of the probability of any usage of the project site by the species detected during the survey. The field survey consisted of observations during two time periods, 7:30 to10:30am and

during the evening hours. Observations were made using binoculars and by listening for vocalizations. See Appendix B.

A total of 26 individual birds representing 7 different species were recorded during the survey. One additional species, Pacific Golden-Plover (*Pluvialis fulva*) was recorded as an incidental observation flying over the project site. Two of the observed species, Hawaii Amakihi (*Hemignathus virens*) and Pacific Golden-Plover, are native species. The Amakihi is a honeycreeper endemic to the Island of Hawaii. The plover is an indigenous migratory shorebird species. The remaining five species detected are considered to be alien to the Hawaiian Islands. The avian diversity and densities were low, which is consistent with the xeric and sparsely vegetated nature of the habitat on the project site. See Appendix B.

A survey was also conducted on the adjacent HELCO and Hawaiian Telcom sites to determine the presence of any downed Newell's Shearwaters or Hawaiian Petrels carcasses. The purpose of the survey was to determine if there was any physical evidence that either of these listed pelagic seabird have collided with the towers on these sites during the 2007 breeding season. No evidence of remains was found on these adjacent sites.

Fauna – Mammalian

A survey of mammalian species was also part of the Biological Survey conducted at the project site. A number of small herds of goats were the only mammalian species detected in the vicinity of the project site during the survey.

Electronic scans using Broadband AnaBatII, ultrasonic bat detector, were made during crespuscular periods during the evening. The endangered Hawaiian hoary bat, the only mammal endemic to Hawaii, was not detected during the survey. Recent research completed on the Island of Hawaii has shown this species is present on a seasonal basis in almost all areas of the island which contains dense vegetation and tree cover. Bats are also attracted to outdoor lighting which attract volant insects on which this species forages. See Appendix B.

2.5.2 Impacts and Mitigation Measures

Flora

Grading for the construction of the Kaupulehu facility tower foundation and equipment building will require removal of what little surface vegetation is present on the project site. Once graded and prepared, the foundation and footings for the building and tower will be constructed. Removal of the surface vegetation will not create an adverse impact to the flora of this area of the island of Hawaii.

The Kaupulehu project site contains no listed or candidate threatened or endangered botanical species as set forth by the USFWS. Thus, construction of the Kaupulehu facility will not have an adverse impact to threatened or endangered species.

Fauna- Avian

The construction of the building and antenna tower would not adversely affect the bird population in the area of the project site or any USFWS or DLNR listed or candidate threatened or endangered species.

As with any above ground structure, bird strikes are possible with the 150-foot high tower and the attached antennas. However, there are a number of factors which indicate the likelihood such bird strikes with the tower and antennas should not occur. First, the Kaupulehu facility tower is located adjacent to five other 100-foot high towers. This group of towers and antennas should be familiar and visible to birds flying in the area so that they could avoid all the towers.

In addition, the Kaupulehu facility tower will be self-supporting and will use no hard-to-see guy wires. It is expected that the Kaupulehu tower will not require lighting that might attract and/or disorient birds in flight at night or during periods of low visibility. It should also be noted that most birds have excellent eyesight and most structures typically do not present a hazard to birds in the area. Overall, the potential for bird strikes with the Kaupulehu tower and antennas should be low and should not present a threat to the birds in the area.

During the Pre-Assessment comment process for this Draft EA, the State of Hawaii Department of Land and Natural Resources Division of Forestry and Wildlife replied that they do not have any objections to the project. See Appendix A.

Fauna – Mammalian

With almost no vegetation on the project site, there are few resources that would attract mammalian species. Although no Hawaiian hoary bats were detected during the field survey, it is probable that bats do occasionally use resources within the general area of the project site. Unlike nocturnally flying seabirds which often collide with man-made structures, bats are uniquely adapted to avoid collision with most obstacles, man-made or natural. Bats navigate and locate prey primarily by using ultrasonic echolocation, which is sensitive enough to allow them to locate and capture small volant insects at night. Thus, bats would not likely collide with the 150-foot tower at the project site.

Overall, modification of the project site for the new communications tower is not expected to result in significant impacts to any botanical, avian, or mammalian species currently listed as threatened, endangered or proposed for listing by the USFWS or the DLNR.

In a response letter received during the pre-assessment consultation period, the U.S. Fish and Wildlife Serivce (USFWS) stated that two additional endangered avian species, Nēnē (*Branta sandvicensis*) and Hawaiian Hawk (*Buteo solitarius*), are known to occur in the general project area. Neither species was encountered during the survey. The habitat present within and adjacent to the site is not habitat in which one would expect to find Nēnē, mainly due to the paucity of vegetation on the project site and in the general project area. Both of these species are diurnal, and thus are unlikely to collide with a monopole tower.

In the same letter the USFWS noted that the candidate species Band-rumped Storm-Petrel (*Oceanodroma castro*) may use the project area while transiting to nesting colonies. To date, only one abandoned nest of this species has been found on the Island of Hawaii. Both the reported abandoned nest and secondary evidence of nesting have all been from high-elevation areas on the southwestern flank of Mauna Loa. If this species does transit the air space above the project site they would face the same

potential risks posed by the tower to Newell's Shearwater and Hawaiian Petrel, discussed above.

2.6 Traffic

2.6.1 Existing Environment

State Route 190, Mamalohoa Highway, located about 2.2 miles north of the project site, provides public access between Waimea and Kailua-Kona and to the project site. Mamalahoa Highway is a two-lane road, one lane in each direction, under the control of the State of Hawaii Department of Transportation (DOT). Mamalahoa Highway has a functional classification of a minor arterial, one of eight functional classifications used by the DOT.

The closest traffic counts were conducted by the DOT in October 2006 at the intersection of Makalapua Road and Mamalahoa Highway, about 5.5 driving miles south of the access road to the project site. The 24-hour two-way traffic volume at the intersection was 16,605 vehicles.

2.6.2 Impacts and Mitigation Measures

Traffic impacts related to construction activities will occur while equipment and materials are moved to the project site. However, this traffic will be short-term occurring during the 10 to 12 month construction period. This should not create an adverse effect to traffic on Mamalahoa Highway as it will represent a very small proportion of the total traffic volume on this roadway.

No personnel will be assigned on a daily basis to the Kaupulehu facility. Contract personnel will visit the project site to conduct tests on the radio equipment and to perform maintenance service on the emergency generator and on other building systems. A total of about 10 to 20 trips per month will occur to conduct the necessary tests and perform maintenance on the equipment at the Kaupulehu facility. This level of activity will not create an adverse affect to traffic on Mamalahoa Highway.

2.7 Air Quality

2.7.1 Existing Environment

The Kaupulehu project site is located in the North Kona District, in a remote area characterized by a low level of development. A low level of development generally indicates an absence of stationary and mobile sources of emissions which could affect ambient air quality.

Standby emergency generators are installed at the HELCO and the Hawaiian Telcom facilities, and generate emissions during testing and outages of commercial power. Besides this, the only other source of emissions is the occasional vehicle trips to these sites for operation and maintenance purposes.

2.7.2 Impacts and Mitigation Measures

Potential short-term adverse air-quality impacts during the construction phase include: 1) generation of fugitive dust from vehicle movement and soil excavation; and 2) exhaust emissions from on-site construction equipment and from construction workers' vehicles traveling to and from the project site. These adverse impacts will be short-term during the period of construction.

Construction activities must comply with provisions of Chapter 11-60.1, Hawaii Administrative Rules (DOH), "Air Pollution Control" and, with respect to fugitive dust, Section 11-60.1-33. In addition, the entire project site is approximately 0.66 acres (6,600 square feet) which will mean a relatively small area of disturbance. The DAGS Contract Specifications Section 01577 include a standard Environmental Controls section with specific reference to Chapter 11-60. Under air pollution control, the Environmental Controls specifications include the provision that the contractor must maintain the areas within and without the project limits free from dust which would cause hazards to the work and to other persons or property. The specifications also state the contractor will be permitted to use accepted methods for dust control such as enclosure and filtering. It is expected that the contractor will comply with State regulations and provide adequate means to control dust during the various phases of construction.

Once construction has been completed, operation of the Kaupulehu facility will involve visits by a contractor who will visit the project site to perform periodic maintenance and testing of equipment and systems. This level of activity will not generate sufficient traffic to adversely affect air quality in the area.

The 40 KW standby emergency generator will be tested once or twice per month to ensure proper operation in the event of an outage of the HELCO system. The testing will involve starting the generator, testing the switching systems, and placing the system under load conditions to ensure proper operation. This testing should require operation of the generator for about 3 to 4 hours per month, or less than 50 hours per year. This level of testing of the emergency generator should not create adverse impacts to the air quality in the area.

2.8 Noise

2.8.1 Existing Environment

The Kaupulehu project site is located about 2.2 miles south of Mamalahoa Highway. Noise from vehicle traffic on the Mamalohoa Highway would be the main mobile noise source near the Kaupulehu project site. The nearest residence is located near the entry to the Kaupulehu project site access road. Other than the operation of emergency back-up generators at the adjacent facilities and the occasional visits to these sites by maintenance personnel, there are no major sources of noise in the vicinity of the Kaupulehu project site.

2.8.2 Impacts and Mitigation Measures

Construction activities such as grading, digging for footings and foundations, and erecting the building and tower will create noise. The equipment used for these activities typically include pick up trucks, excavators, graders, rollers, backhoes, concrete delivery trucks, water tank trucks, hydraulic cranes, and forklifts. Noise generated by this will be short-term during the period of construction. Once construction has been completed, the noise impact will no longer occur.

Once constructed has been completed, noise will be generated by vehicles used by contractors and others visiting the Kaupulehu project site for testing and other purposes.

An average total of about 10 to 20 trips per month will be made to the project site. Based on the site's remoteness, this level of traffic should not create an adverse affect to the noise environment in the area of the project site.

The County of Hawaii zoning designation for the project site is Agriculture (A-20a). Title 11 Hawaii Administrative Rule State of Hawaii Department of Health Chapter 46, Community Noise Control identifies maximum permissible sound levels for classes of zoning districts classes using the zoning established by the counties. According to Chapter 46, the maximum permissible sound level at any point at or beyond the property line is 70 dBA for zoning district Class C, areas equivalent to lands zoned agriculture. The maximum permissible sound level shall apply in a manner deemed appropriate by Director of the Department of Health.

The emergency generator will be placed within the radio building and will be designed to suppress noise during testing and operation. The Kaupulehu project site is about 2.2 miles from the nearest residence. Since noise levels decline rapidly with distance from the source, operation of the emergency generator should not adversely affect any surrounding properties.

2.9 Archaeological and Cultural Resources

2.9.1 Existing Environment

In December 2007, an archaeological field survey was conducted on the Kaupulehu project site. The objective of the survey was to determine if an archaeological inventory survey would be required to meet the requirements of the State of Hawaii Department of Land and Natural Resources Historic Preservation Division (SHPD).

The archaeological field survey consisted of a 100 percent surface examination with the surveyors walking transects at 10-meter intervals. No archaeological sites or features were identified during the field survey. This is due to the parcel's location on the historic Kaupulehu lava flow which is comprised of uneven lava with no soil development. The survey results were included in the Archaeological Assessment which was submitted to the State Historic Preservation Division (SHPD). Appendix C shows the Archeological Assessment.

2.9.2 Impacts and Mitigation Measures

The State Historic Preservation Division reviewed the Archeological Assessment, and, on March 17, 2008 replied, based on the assessment report, the Historic Preservation Division has determined that construction of the facility will have no effect on historic properties. The SHPD has also concurred that no further archaeological work is warranted at the project site. See Appendix C.

Although the project is not anticipated to encounter any historic resources, the general notes in the contract drawings will state that, should archaeological sites such as walls, platforms, pavements or mounds, or remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work shall cease immediately and the find shall be protected from further damage. The contractor shall immediately contact State Historic Preservation Division, who will assess the significance of the find and recommend an appropriate mitigation measure, if necessary.

2.10 Cultural Impact Assessment

2.10.1 Existing Environment

House Bill No. 2895 H.D.1 was approved by the Governor on April 26, 2000 as Act 50 which amended Chapter 343 Hawaii Revised Statutes to require a cultural impact assessment be included in the preparation of an Environmental Assessment.

2.10.2 Impacts and Mitigation Measures

To meet the requirements of Act 50, a Cultural Impact Evaluation was undertaken for the Kaupulehu project. The purpose of the evaluation was to is to assess potential impacts to cultural resources and practices as a result of development of the Kaupulehu project in the Ka'ūpūlehu Ahupua'a. Specific request for consultation was sent to the

- Department of Land and Natural Resources (DLNR) Ancient and Historic Trails section;
- DLNR Historic Preservation Division, Hawai'i Island Office;
- DLNR Cultural Specialist, State Historic Preservation Division;

- Hawai'i Island Burial Council member
- Cultural descendant, member of Hawai'i Island Burial Council
- Chair, Hawai'i Island Burial Council
- Office of Hawaiian Affairs, Administrator
- Office of Hawaiian Affairs, Community Resources Manager
- Hawaiian cultural practitioner and *kāma'aina* whose *ohana* has lived in Ka'ūpūlehu for generations

Specific guidance was sought regarding the following aspects of the evaluation:

- General history and present and past land use of the project area.
- Knowledge of cultural sites which may be impacted by future development of the project area - for example, historic sites, archaeological sites, and burials.
- Knowledge of traditional gathering practices in the project area, both past and ongoing.
- Cultural associations of the project area, such as legends and traditional uses.
- Referrals of *kūpuna* or elders and *kama'āina* who might be willing to share their cultural knowledge of the project area and the surrounding *ahupua'a* lands.
- Any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the project area.

The community consultation effort was made by letter, e-mail, and telephone contact. A number of attempts were made to contact individuals, organizations, and agencies apposite to the cultural impact evaluation for Ka'ūpūlehu Ahupua'a. Appendix D contains summary information regarding the cultural assessment investigation.

A telephone interview was conducted with Ms. Springer on April 22, 2008. A former Office of Hawaiian Affairs trustee and a member of Kahu Ku Mauna, the cultural advisory group which advises the Board of Regents of the University of Hawai'i and the Mauna Kea Management Board, Ms. Springer is an active Hawaiian cultural practitioner whose family has resided in Ka'ūpūlehu *ahupua'a* and nearby *ahupua'a* for generations. Her great-great grandmother, Luka Hopula'au, was the first wife of John Avery Maguire, the founder of Hu'ehu'e Ranch.

When asked if she had any cultural concerns regarding the proposed telecommunications facility, Ms. Springer said the following:

> I haven't been on the site for a number of years now, and the 1980s was the last time. But I do know the proximity to the dry forest resource which is the primary resource. As I recall, the project area is mostly lava and *'ōhi'a* trees. Even though it is within the vicinity of the *kauwila* (*Alphitonia ponderosa*) forest, I don't believe the project will impact it.

In response to the question if there are historic trails near the project site, Ms. Springer replied:

> There are no trails nearby, on that lava flow. There are trails to the left and right, but not on the Ka'ūpūlehu flow. The Ka'ūpūlehu trails are within the vicinity of the Hualālai Ranch entrance, which is quite a distance from the project site. The flow itself, for the lineage of Pele and their cohort, it has value to them as the most recent expression of Pele coming to Kona. The flow itself has value.

Mr. Arthur Mahi was interviewed via telephone on April 22, 2008. Born July 5, 1933 in Laupāhoehoe, North Hilo, Mr. Mahi is a pureblood Native Hawaiian who is knowledgeable with the traditional Hawaiian way of life. His maternal great-great grandfather was Kuakahela, who was the *konohiki* of Ka'ūpūlehu *ahupua'a* when Kuakini was the governor. As a baby, he was given in the *hanai* custom to his maternal grandfather, Keaua Kuakahela, who was born in 1870 and skilled in Hawaiian beliefs and practices. Mr. Mahi was chosen by his grandfather to carry on the knowledge of the Hawaiian culture to teach others.

During his childhood, he would spend his vacations in Ka'ūpūlehu and as an adult, he would spend weekends visiting *ohana*. He remembers using the trails in Ka'ūpūlehu to visit friends and family or to go down to the beach. Mr. Mahi said the following: "When I worked in Hu'ehu'e Ranch, there was a *mauka-makai* trail; we used it to down to Kūki'o to go fishing. We would come down on Friday and come up again on Sunday."

When asked if he had any specific comments about the proposed project, Mr. Mahi stated:

> When they put that thing on, it might affect our T.V., radio and telecommunication reception. We have one already up there, in

> Ka'ūpūlehu *mauka*. Why do they have to make it higher? How many are they going to need? It might interfere with the signals now, it might jam things up.

None of the community contacts interviewed for the cultural assessment identified any strong concerns regarding the impact of the Kaupulehu project on cultural practices or resources. Based on these findings, the cultural impact evaluation found the Kaupulehu project will have minimal impact upon native Hawaiian cultural resources, beliefs, and practices.

2.11 Infrastructure

2.11.1 Water

Existing Conditions

The Kaupulehu project site is not served by the County of Hawaii Department of Water Supply system. The Kaupulehu facility will not require potable water services for domestic uses or for fire protection.

Impacts and Mitigation Measures

The Kaupulehu project will not create a need for potable water on the project site. Thus, the Kaupulehu project will not have an adverse affect to the County's water system, including sources of water.

Fire protection for the building will include a fire suppression system and hand-held fire extinguishers.

2.11.2 Sewer

Existing Conditions

The radio equipment building will not have toilet facilities. Thus, the Kaupulehu facility will not require wastewater services from the County of Hawaii or use an on-site system for treatment or disposal.

Impacts and Mitigation Measures

The Kaupulehu facility will not have an adverse affect to the County's wastewater system nor create adverse affects from the on-site disposal of wastewater.

2.11.3 Electrical

Existing Conditions

Hawaii Electrical Light Company (HELCO) provides commercial electrical power to the North Kona area, including to area near the Kaupulehu project site. Single phase electrical service is provided to the existing HELCO facility via overhead lines located within the electrical easement from Mamalahoa Highway. This overheard line also serves the Hawaiian Telcom facility located to the north and east of the Kaupulehu project site.

Single phase power is provided to the existing HELCO facility by a pole mounted HELCO transformer.

Impacts and Mitigation Measures

Electrical service to the Kaupulehu facility will be provided via the existing HELCO pole mounted transformer located near the HELCO radio building, or if necessary, by installation of a separate transformer. Although 3-phase power would be preferred for the Kaupulehu project site, single phase service would be acceptable.

Electrical service to the Kaupulehu project site would be by underground lines which would be connected to the pole mounted transformer. A new service meter would be located on the equipment building. The Kaupulehu facility will have a maximum design peak electrical load of about 40 kilowatts to service the battery chargers, air conditioning, and other systems. Thus, the Kaupulehu facility will not create an adverse effect to the HELCO system, as the existing system has the capacity to accommodate the new loads.

2.12 Visual Considerations

2.12.1 Existing Conditions

The County of Hawaii General Plan, in the section on Natural Beauty, notes that the steep slope of Hualalai, "provides a green backdrop when viewed from the coast, or spectacular views of the coastline, ocean, and horizon from higher elevations." This section also specifically lists Tax Map Key 7-2-003: parcels 1 and 2 within the ahupua'a of Kaupulehu as a site of natural beauty within the North Kona District. These TMK parcels are located below Mamalahoa Highway, northwest of the approximately 7,065-acre parcel which surrounds the Kaupulehu project site.

The Kaupulehu project site is located about 2.2 miles south of Mamalahoa Highway at an elevation 3300 feet mean sea level (msl). Mamalahoa Highway west of the Kaupulehu project site lies at an elevation of around 1900 feet msl. This places the Kaupulehu project site about 1,400 feet higher than the road. Mamalahoa Highway is cut into the slope of Hualalai in this location so that most views in the mauka or upslope direction are obscured. However, from about the 27 mile marker along Mamalahoa Highway, occasional glimpses of the three existing 100-foot HELCO and the two Hawaiian Telcom 100-foot towers can be seen at intervals where gaps on the hillside adjacent to the road enable motorists to view of the upper slopes. Glimpses of the towers are also dependent on weather conditions. The slope of Hualalai is characterized by clear mornings and low cloud cover in the afternoons which tend to obscure views of the upper slopes above 3000 feet.

Scattered stands of trees and brush also provide some screening of the existing telecommunications sites along this stretch of road. From about the 26 mile marker, the topography is slightly flatter which provides an unobstructed view of the existing towers, although at this distance (over 2.5 miles), the existing towers are only faintly visible. Figure 1.5 shows a view of the existing telecommunication towers from the about 25 mile marker.

The posted speed limit along the stretch of Mamalahoa Highway below the project site is 55 miles per hour. Thus, unless the vehicle is stopped or motorists are purposely looking for a glimpse of the existing telecommunications towers, they are only barely visible. The predominant scenic views along this stretch of highway are towards the

coast. It should also be noted that the existing telecommunications towers have been in existence since 1973. According to the Special Permit Application (SPP 01-021) to allow continued use of the HELCO facility, the County of Hawaii Planning Department has not received any complaints about this facility's presence or operation.

2.12.2 Impacts and Mitigation Measures

The Kaupulehu facility will be located in a remote area adjacent to existing telecommunications towers on the HELCO and Hawaiian Telcom sites. Public views of the facility will be confined to distant glimpses of the upper portion of the new tower at gaps in the terrain when traveling along Mamalahoa Highway. Although the 150-foot tower will be higher than the five existing adjacent 100-foot towers, the remote location of the project site, elevation, and distance from the road will ensure that the Kaupulehu tower will have not have a significant adverse impact on the scenic views of the slopes of Hualalai.

Any visual impact of the Kaupulehu tower and antennas will also be mitigated since they will be factory painted a light gray shade similar to the color of the galvanized finish. At a distance, the color will not contrast sharply with the surrounding background. In addition, the slope of Hualalai is characterized by low cloud cover in the afternoon which will obscure views of the Kaupulehu tower and antennas. The steel-gray color of the tower and antennas will blend effectively with these conditions.

2.13 Biological Exposure

2.13.1 Existing Electromagnetic Radiation Environment

Radio frequency (RF) radiation is part of the electromagnetic radiation (EMR) spectrum that applies to frequencies between 3 kilohertz (kHz) and 300 gigahertz (Ghz). A variety of commercial communications and data systems are made possible by transmitting information via electromagnetic waves. For example, most amplitude modulated (AM) radio stations transmit signals in the frequency range of 550 kHz to 1,600 kHz, while frequency modulated (FM) radio stations transmit signals in the frequency range of 88 MHz to 108MHz.

The Federal Communications Commission (FCC) has established maximum permissible exposure (MPE) limits to electromagnetic radiation. A summary of the FCC's "Local Official's Guide to RF" explains:

> The FCC's guidelines establish separate MPE limits for "general population/uncontrolled exposure" and for "occupational/controlled exposure." The general population/uncontrolled limits set the maximum exposure to which most people may be subjected. People in this group include the general public not associated with the installation and maintenance of the transmitting equipment. Higher exposure limits are permitted under the "occupational/controlled exposure" category, but only for persons who are exposed as a consequence of their employment (e.g., wireless radio engineers, technicians). To qualify for the occupational/controlled exposure category, exposed persons must be made fully aware of the potential for exposure (e.g., through training), and they must be able to exercise control over their exposure. In addition, people passing through a location, who are made aware of the potential for exposure, may be exposed under the occupational/controlled criteria. The MPE limits adopted by the FCC for occupational/controlled and general population/uncontrolled exposure incorporate a substantial margin of safety and have been established to be well below levels generally accepted as having the potential to cause adverse health effects.

The FCC limits for EMR are discussed in detail on the FCC website at http://www.fcc.gov/oet/rfsafety/.

Therefore, any area located outside of a radio facility fence is defined as a "general population/uncontrolled exposure" area. Almost all people live and work in an "uncontrolled" environment filled with radio energy from sources as diverse as broadcast stations (AM, FM, and TV), cellular telephone transmitter sites and handheld cell phones, LMR, wireless computer networks, and natural radio energy sources such as thunderstorms. However, this "uncontrolled" environment is safe because the signal energies are usually well below the MPE limits. Although the Kaupulehu facility will be considered an "occupational/controlled exposure" environment, the expected EMR levels both on the ground inside the fenced compound and inside the equipment building will be below the MPE limits for a "general population/uncontrolled exposure"

environment. Personnel servicing and testing equipment within the building should not be exposed to an EMR hazard. However, tower maintenance personnel can be exposed to potentially unsafe levels of EMR if proper access and work procedures are not followed.

2.13.2 Impacts and Mitigation Measures

EMR consists of time varying electromagnetic fields that have the characteristic of motion or propagation. Unfortunately, radio frequency EMR is often confused with ionizing radiation which has known biological hazards ascribed to X-rays, gamma rays, and particle beam energies. Even moderate levels of ionizing radiation are dangerous as they have sufficient quantum energy to expel an electron from a molecule. This expulsion leaves the molecule positively charged and thereby affecting its interactions with neighboring molecules. In biological systems this ionization can alter the molecule functions fundamentally and often irreversibly.

The energies from non-ionizing radiation, such as radio frequency EMR, are much lower such that, even very high signal intensities, their primary effect is to agitate or vibrate the molecular structure rather than to ionize them. The effect of this agitation is to produce heat. In humans, the heat produced by such exposure is undetectable above the heat produced by the normal metabolic rate. Even at intentional exposure, the thermoregulatory capabilities of mammals and birds can adequately accommodate dissipation of the added heat load.

In a rigorous study completed for a DAGS facility with a similar mix of emitters, the distances required to keep personnel safe from EMR hazards were less than 20 feet for all emitter types and the only hazardous area associated with the microwave emitters occurred immediately in front of those antennas. The lowest microwave dish antenna will be mounted with its centerline at 17 feet above ground level and its bottom rim at 12 feet above ground level. Thus, the Kaupulehu facility will not produce an EMR hazard to people or animals beyond the fence line.

3. RELATIONSHIP to PLANS, POLICIES and CONTROLS

3.1 Hawaii State Plan

The Hawaii State Plan, adopted in 1978 and revised in 1988, establishes the overall theme, goals, objectives, and priority guidelines to guide the future long-range development of the State. The Kaupulehu facility supports and is consistent with the following State Plan objectives and policies:

Section 226-6 Objectives and policies for the economy - in general.

> *(b) (6) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.*

The Kaupulehu facility will involve construction of new facilities at a new site. The Kaupulehu facility will increase the level of construction activity on the County of Hawaii during the period of construction which will enhance the state's growth objectives.

Section 226-10.5 Objectives and policies for the economy – information industry

> *(b) (1) Encourage the continued development and expansion of the telecommunications infrastructure serving Hawaii to accommodate future growth in the information industry.*

The Kaupulehu facility will enhance the voice communication and data transmission capabilities of public agencies to provide information to all areas of the public sector. The facility has been planned to accommodate the future needs to the public agencies using the Anuenue system.

Section 226-11 Objectives and policies for the physical environment - land-based, shoreline, and marine resources.

> *(b) (3) Take into account the physical attributes of areas when planning and designing activities and facilities.*

The Kaupulehu facility is located adjacent to two existing similar facilities used by the Hawaiian Electric Light Company and by Hawaiian Telcom. This co-location with other telecommunications towers minimizes the visual impact from the facility on the surroundings and allows shared use of the overhead electrical system which services the adjacent facilities. The Kaupulehu facility project site has also been designed to take into account the topographic conditions on the project site to minimize excavation or grading.

Section 226-14 Objectives and policies for facility systems – general.

> *(b) (1) Accommodate the needs of Hawaii's people through the coordination of facility systems and capital improvement priorities in consonance with the state and county plans.*

The Kaupulehu facility has been planned to be jointly used by Federal, State and County public agencies to provide vital transmission of voice and data communications. The Kaupulehu facility will be a single facility which can accommodate the needs of various public agencies.

3.2 Land Use Plans and Policies

3.2.1 State Land Use District

The Hawaii Land Use Law of Chapter 205, Hawaii Revised Statutes, classifies all land in the State into four land use districts: Urban, Agriculture, Conservation, and Rural. The Kaupulehu facility project site is located in the Agricultural District classification.

A Special Permit approved by the County of Hawaii Planning Commission will be required.

3.2.2 County of Hawaii General Plan

The County of Hawaii General Plan is a policy document for the long-range comprehensive development of the island of Hawaii and also provides the direction for future growth of the County. The current General Plan was adopted as Ordinance 05 25 on February 9, 2005.

A well-balanced land use pattern capable of meeting the future needs of the County is an essential part of the General Plan. The General Plan Land Use Pattern Allocation Guide (LUPAG) Maps indicate the general location of various land uses in relation to each other. On Figure 8, Map 7 in the General Plan, the area that includes the project site is designated Extensive Agriculture. The Extensive Agriculture designation is defined as follows:

> *Lands not classified as Important Agricultural Land. Includes lands that are not capable of producing sustained, high agricultural yields without the intensive application of modern farming methods and technologies due to certain physical constraints such as soil composition, slope, machine tillability and climate. Other less intensive agricultural uses such as grazing and pasture may be included in the Extensive Agriculture category.*

The project site meets the criteria for Extensive Agriculture due to the lack of soil and vegetation, and its overall unsuitability for modern farming.

The goals, policies, standards and courses of action from "Public Facilities" Section 10 of the General Plan that are applicable to the Kaupulehu facility are set forth below.

10.1 OVERVIEW

10.1.2 Goal

(a) Encourage the provision of public facilities that effectively service community needs and seek ways of improving public service through better and more functional facilities which are in keeping with the environmental and aesthetic concerns of the community.

10.1.3 Policies:

(b) Coordinate with appropriate State agencies for the provision of public facilities to serve the needs of the community.

10.3 PROTECTIVE SERVICES

10.3.2 Policies:

(a) Development of police and fire facilities should entail joint use structures whenever feasible.

10.3.4.7 NORTH AND SOUTH KONA

10.3.4.7.2 Course of Action

(a) Service facilities shall be improved to meet needs.

The Kaupulehu facility will install a modern high capacity digital interconnect to replace the Rainbow analog radio channels used by the various public agencies. The backbone of the new digital system will have the capability to transmit 155 Mbit/s (megabits per second) which is equivalent to 2016 traditional voice channels or about 17 times the capacity of the Rainbow analog system. The conversion to a digital system is needed to handle the expanding voice and data communications requirements of the public safety community. The conversion to high capacity digital microwave was also forced both by the Federally-mandated reassignment of analog microwave frequencies to personal communications systems (cellular telephones) and public safety agencies' growing need for communications services to properly serve the public in the coming years. Thus, the Kaupulehu facility will be consistent with Public Facilities goals and policies and with the Protective Services policy and course of action in the General Plan.

The policies and standards from "Telecommunications" Section 11 of the General Plan that are applicable to the Kaupulehu facility are set forth below.

11.3.2 Policies:

(b) Work with the telecommunications industry to increase the availability of emergency telephones throughout the island.

Although the Kaupulehu facility will be a State-owned and operated rather than private facility, the new telecommunications will significantly upgrade the infrastructure that

supports local government emergency communications. The County of Hawaii microwave links will connect from the Kaupulehu facility to sites at Waimea and Kahua Ranch.

11.3.3 Standard:

(a) In the development and placement of telephone facilities, such as lines, telecommunications and cellular towers, poles, and substations, the design of the facilities shall consider the existing environment, and scenic view and vistas shall be considered and preserved where possible.

The selection of the Kaupulehu site for a new telecommunications antenna has taken into consideration the scenic views and vistas of the slopes of Hualalai. Based on the remote location of the site, elevation, distance from Mamalahoa Highway, and proximity to existing telecommunications towers on the HELCO and Hawaiian Telcom sites, the Kaupulehu facility tower will not have a significant adverse impact on scenic views. Public views of the facility will be confined to distant glimpses of the upper portion of the new tower at gaps in the terrain along Mamalahoa Highway.

3.2.3 County of Hawaii Zoning

The County of Hawaii zoning designation for the project site is A-20a, General Agricultural District. Although the Kaupulehu facility will be a public facility to be used by public agencies for public purposes, a Special Permit approved by the County of Hawaii Planning Commission will be required.

Hawaii County Code Chapter 25, Zoning, Division 7, Agricultural Districts, Section 25-5-72 identifies permitted uses in the Agricultural zoned lands. Under Section, 25-5-72, a, (21) shows telecommunication antennas, as permitted under Section 25-4-12. Hawaii County Code Chapter 25, Division 2, Heights, Section 25-4-22, identifies exemptions from height limitations. The listed height limit as shown under Section 25-4-22 (d) utility poles and lines and telecommunication antennas not to exceed 500 feet from existing grade.

The Kaupulehu facility will be a public facility to be used by public agencies for public purposes. A Special Permit approved by the County of Hawaii Planning Commission will be required to construct and operate the Kaupulehu facility.

3.2.4 County of Hawaii Special Management Area

The Coastal Zone Management Act contains the general objectives and policies upon which all counties within the State have structured specific legislation which created Special Management Areas (SMA). Any development within the Special Management Area boundary requires a SMA Use permit which is administered by the County of Hawaii.

The Kaupulehu project site is not located within the County's SMA.

4. ALTERNATIVES TO THE PROPOSED ACTION

4.1 No Action Alternative

Under the No Action alternative, resources in the form of financial capital, construction materials, fossil fuels, and human labor required for planning, engineering, construction, and operation/maintenance of the new facility would not be expended. The approximately 0.66 acre project site would remain in an undeveloped state.

Although the No Action alternative would use no resources, there are a number reasons to proceed with the proposed project. Without the proposed action, public safety radio users would be limited to the use of existing voice and data communication systems which have limited capabilities and a questionable amount of service lifetime remaining. Also, the various public agency users would have to rely on dated systems for transmitting data and voice communications. Although there would be no disturbance to the project site, use of the limited and dated systems would not be in the public interest, particularly when the Kaupulehu facility will serve public services agencies, including the County of Hawaii Police Department. These agencies need an adequate and modern communication system to provide a high level of public service needed by the residents of the County of Hawaii. Based on these considerations, the No Action alternative is not considered a feasible alternative.

4.2 Other Sites

The Kaupulehu facility site requires microwave line-of-sight to provide an unobstructed path for signals between the radio facilities in North Kohala, on Humuula on the southern slope of Mauna Kea, and a planned facility in the Hilo area. For any alternative site to be considered, it would have to support a microwave path that meets the line-of-sight and minimum path length criteria for a viable communications link.

While there may be other sites that meet this line-of-sight criteria, none of them would have the advantages of the selected site in terms of existing available infrastructure, existing roadway access, and proximity to already existing communications antennas owned and operated by HELCO and Hawaiian Telcom. The additional infrastructure requirements at an alternate site would increase the development costs significantly and would also have additional environmental consequences related to new access road

construction and utility installation. Further, the possible presence of culturally and archaeologically significant resources could also hinder development of an alternate site. Lastly, construction of a radio facility at a site which does not currently contain similar facilities could detract from the visual character of the North Kona District. Based on these considerations, the proposed project site is considered the optimum location for a new facility, and the use of another site is not considered a feasible alternative.

4.3 Use of Other Facilities

As previously discussed, the Kaupulehu project site is adjacent to the existing HELCO facility which includes three 100-foot towers, including one 4-leg self supported tower. There is an existing co-location agreement between HELCO and the State of Hawaii which allows the State to mount antennas on the tower and install equipment racks in the HELCO building. However, the agreement limits the number of antenna positions available to the State on the HELCO tower. The existing co-location agreement also limits the number of equipment racks that can be installed by the State at the HELCO facility. Regardless of the limitations imposed by that agreement, the HELCO facility has insufficient antenna positions, floor space, and backup power reserves to support the Kaupulehu radio systems. Given the conflicts related to the antennas on the tower and the space in the equipment building, use of the HELCO facility is not a feasible alternative to construction of the Kaupulehu facility.

The antenna plan developed by DAGS shows a total of 14 microwave antennas to be mounted on the tower. This includes the microwave antennas to replace those used by the State of Hawaii and the County of Hawaii that are currently on the HELCO tower. The existing HELCO 100 foot 4-leg tower shows a total of 18 microwave antennas. The HELCO tower could not accommodate the additional requirement for the 14 DAGS microwave antennas

Lastly, the DAGS specifications require the Kaupulehu facility building, tower, and antennas remain operational at wind speeds up to 110 miles per hour (mph) and the facilities survive wind speeds up to 155 mph. Wind speeds of 110 mph are the highest sustained winds expected in a Safir-Simpson Category 2 hurricane. Wind speeds of 155 mph are the highest reached in a Safir-Simpson Category 4 hurricane.

It is believed that the HELCO tower would not meet the 155 mph wind survival requirement. Thus, there is the need for the Kaupulehu facility.

5. ANTICIPATED DETERMINATION

Short-term construction impacts include disruption to the project site and surrounding areas during construction, decline in air quality from construction activities, and increase in noise levels. Once construction has been completed, the short-term adverse impacts will no longer occur.

Based on analysis of the anticipated impacts, a Finding of No Significant Impact (FONSI) is anticipated for the Kaupulehu facility project. The significance criteria to make this determination are set forth below and in Hawaii Administrative Rules Title 11, State of Hawaii Department of Health, Chapter 200, Environmental Impact Statement Rules.

1) *Involve an irrevocable commitment to loss or destruction of any natural or cultural resources*;

The Kaupulehu facility project site does not provide habitat for Federal or State of Hawaii listed or candidate threatened or endangered species of flora or fauna. The project site consists of weathered a'a lava with little or no soil cover and vegetation of sparse fountain grass and a single ohia tree. Thus, the Kaupulehu project site will not result in the loss or destruction of natural resources. Based on the results of the archaeological field survey, the Historic Preservation Division, via letter dated March 17, 2008, has determined that construction of the facility will have no effect on historic properties, and that no further archaeological work is warranted. (See Appendix C).

None of the community contacts interviewed for the cultural assessment identified any strong concerns regarding the impact of the Kaupulehu project on cultural practices or resources. Based on these findings, the cultural impact evaluation found the Kaupulehu project will have minimal impact upon native Hawaiian cultural resources, beliefs, and practices.

2) *Curtail the range of beneficial uses of the environment*;

The Kaupulehu facility will use lands within Kaupulehu which are unsuited for agriculture, residences, or any other identifiable land uses. The Kaupulehu facility will occupy an area of 28,900 square feet (0.66 acres) which is a minor portion of the

surrounding areas covered in former lava flows and marginal grazing land in the North Kona district. Thus, the Kaupulehu facility will not curtail the beneficial uses of the environment.

3) *Conflict with the State's long-term environmental policies or goals as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders*;

The Kaupulehu facility project will not involve actions or activities which would adversely affect natural resources in the area. The Kaupulehu facility will be consistent with the guidelines of Chapter 344, HRS, as it will provide a public facility to support the critical functions assigned to the State of Hawaii. As such, the Kaupulehu facility will not conflict with the State's long-term environmental policies or goals as expressed in Chapter 344, HRS.

4) *Substantially affect the economic or social welfare of the community or state*;

The Kaupulehu facility will be a public facility to be used by public agencies for public purposes, including for the County of Hawaii. The Kaupulehu facility is an integral part of the infrastructure needed to maintain the health and welfare of the community. The Kaupulehu facility will not have an adverse effect on the economic or social welfare of the community.

5) *Substantially affect public health*;

An efficient and well-maintained voice and data communication system is needed to protect the public health of residents and visitors on Hawaii. The Kaupulehu facility will serve as the facility for State and County of Hawaii agencies to conduct their mandated public functions. Thus, the Kaupulehu facility project will not have an adverse effect on public health.

The Kaupulehu facility is not expected to produce an EMR hazard to people or animals on the ground or in areas beyond the site fence line. Thus, the Kaupulehu facility project will not have an adverse effect on public health.

6) *Involve substantial secondary impacts, such as population changes or effects on public facilities*;

The Kaupulehu facility will be a public facility which will be used by the State of Hawaii to support its mission critical applications. No government or contractor personnel will be assigned to daily operation of the Kaupulehu facility. Contract personnel will visit the project site to conduct tests and to perform maintenance service on the air conditioning and power systems and to clean the building and surrounding area. The contractor personnel are expected to be residents from Hawaii. Thus, construction of the Kaupulehu facility will not create secondary impacts, such as population changes or effects on public facilities.

7) *Involve a substantial degradation of environmental quality*;

The Kaupulehu facility is anticipated to result in short-term impacts to noise, air quality and traffic in the immediate vicinity of the project site during the period of construction. However, due to the project site location and distance from residential uses, these impacts will not be significant. The Kaupulehu facility project site does not contain Federal or State listed or candidate threatened or endangered species of flora or fauna. Further, based on the results of the archaeological field survey, construction of the Kaupulehu facility should have no adverse impacts to historic sites.

None of the community contacts interviewed for the cultural assessment identified any strong concerns regarding the impact of the Kaupulehu project on cultural practices or resources. Based on these findings, the cultural impact evaluation found the Kaupulehu project will have minimal impact upon native Hawaiian cultural resources, beliefs, and practices.

8) *Have a cumulative effect upon the environment or involves a commitment for larger actions*;

The Kaupulehu facility does not involve a commitment to further actions to other State of Hawaii related projects on Hawaii. As a result, the Kaupulehu facility will not have a cumulative effect upon the environment or involve a commitment by the State to larger actions on Hawaii.

9) *Affect a rare, threatened or endangered species;*

The Kaupulehu facility project site does not contain Federal or State listed or candidate threatened or endangered species of flora or fauna. Thus, the Kaupulehu facility project site will not affect a threatened or endangered species.

10) *Detrimentally affect air or water quality or ambient noise levels*;

Operation of construction equipment would increase noise and exhaust emission levels in the immediate vicinity of the Kaupulehu facility project site. Once operational, the Kaupulehu facility will contribute almost no additional noise or air emissions to the local area. There are no groundwater or surface water resources on or near the project site that will be affected by the construction and operation of the facility.

11) *Affects or likely to suffer damage by being located in an environmentally sensitive area such as a floodplain, tsunami zone, beach, erosion-prone area, geographically hazardous land, estuary, fresh water or coastal water*;

According to the Flood Insurance Rate Map (FIRM), the Kaupulehu facility is located in area not subject to flood hazards, a hazardous floodplain or a tsunami zone. Based on the geotechnical investigation, the project site does not appear to be located in the immediate proximity of mapped geologic fault structures. The Kaupulehu facility project site is also not within the County of Hawaii Special Management Area. In addition, the Kaupulehu facility project site is not within the coastal shoreline area. Thus, the Kaupulehu facility project site is not located in an environmentally sensitive area.

12) *Substantially affect scenic vistas and viewplanes identified in county or state plans or studies*;

The County of Hawaii General Plan, in its section on Natural Beauty, notes that the steep slope of Hualalai, "provides a green backdrop when viewed from the coast, or spectacular views of the coastline, ocean, and horizon from higher elevations." This section also specifically lists Tax Map Key 7-2-03: parcels 1 and 2 within the ahupua'a of Kaupulehu as a site of natural beauty within the North Kona District. These TMK

parcels are located below Mamalahoa Highway, northwest of the approximately 7,065-acre parcel, TMK 7-2-02: parcel 1, which surrounds the Kaupulehu facility project site.

Due to the vast land area that surrounds the project site and adjacent telecommunication facilities, the slopes of Hualalai appear as an unbroken green backdrop when viewed from the coast. Even from Mamalahoa Highway, where the terrain allows unobstructed views of the northern slope of Hualalai, the existing telecommunication facilities are just barely discernible. Although the 150-foot tower will be higher than the five existing 100-foot towers, the remote location of the site and the distance from the road ensures that the additional height will not have a significant adverse impact on the scenic views of the slopes of Hualalai. Viewplanes of the coastline, ocean, and horizon will also be unaffected.

Any visual impact of the Kaupulehu tower and antennas will also be mitigated since they will be factory painted a light gray shade similar to the color of the galvanized finish. At a distance, the color will not contrast sharply with the surrounding background. In addition, the slope of Hualalai is characterized by low cloud cover in the afternoon which will obscure views of the Kaupulehu tower and antennas. The steel-gray color of the tower and antennas will blend effectively with these conditions. In addition, the slope of Hualalai is characterized low cloud cover in the afternoon which will further obscure views of the Kaupulehu tower and antennas. The unpainted galvanized steel-gray color of the tower and antennas will blend effectively with these conditions.

13) *Require substantial energy consumption.*

The Kaupulehu facility is public facility to be used by public agencies for public purposes. It is a new facility which will be planned and designed to minimize use of electrical power. Thus the Kaupulehu facility project will not create a substantial increase in energy consumption.

Based on these findings and the assessment of potential impacts from the Kaupulehu facility, a Finding of No Significant Impact (FONSI) is anticipated.

6. CONSULTED PARTIES

6.1 Pre-Assessment Consultation

The following agencies were consulted during the pre-assessment phase of the Draft Environmental Assessment. Each agency was sent a copy of a project summary and a request for their written comments on the project. Those who formally replied are indicated with a ✓. All written comments and responses are reproduced in Appendix A.

✓US Army Corps of Engineers
US Department of Transportation Coast Guard
✓US Department of the Interior Fish and Wildlife Service
State of Hawaii Department of Agriculture
✓State of Hawaii Department of Defense
State of Hawaii Department of Health
✓State of Hawaii Department of Land and Natural Resources (DLNR)
✓State of Hawaii DLNR - Historic Preservation Division
✓State of Hawaii Department of Hawaiian Home Lands (see Appendix C)
State of Hawaii Department of Transportation
✓Office of Hawaiian Affairs
✓County of Hawaii Civil Defense
✓County of Hawaii Planning Department
✓County of Hawaii Department of Public Works
✓County of Hawaii Police Department
Hawaii Electrical Light Company
State Legislators

6.2 Agencies and Organizations to be Consulted on the Draft EA

The following is a list of agencies and organizations that will be consulted during the preparation of the Draft Environmental Assessment. Copies of the comments and responses received during the review period will be included in the Final EA.

Federal Agencies
Department of the Army, US Army Engineer District, Honolulu
US Department of the Interior of the Fish and Wildlife Service

US Department of the Interior Geological Survey
US Department of Transportation Federal Aviation Administration
US Coast Guard

State Agencies
Department of Agriculture
Department of Business, Economic Development and Tourism
DBED&T - State Energy Office
Department of Defense
Department of Hawaiian Home Lands
Department of Health
Department of Health - Environmental Management Division
Department of Land and Natural Resources
Department of Land and Natural Resources Historic Preservation Division
Department of Land and Natural Resources - Water Resource Management
Department of Transportation
Office of Hawaiian Affairs
University of Hawaii Water Resources Research Center
University of Hawaii Environmental Center
Kailua-Kona Public Library

County of Hawaii Agencies
County of Hawaii Civil Defense
County of Fire Department
County of Hawaii Department of Parks and Recreation
County of Hawaii Planning Department
County of Hawaii Police Department
County of Hawaii Department of Research and Development
County of Hawaii Department of Public Works
County of Hawaii Department of Water Supply

Officials
Senator Paul Whalen
Representative Cindy Evans
Councilman K. Angel Pilago

Public Utilities

Hawaii Electric Light Company
Hawaiian Telcom

Organizations

B.P. Bishop Estate
Kona-Kohala Chamber of Commerce
Waimea Community Association
Hualalai Ranch

Surrounding Landowners

Hanna K. Springer Trust
Robert E. Machado
Scott Olin
Livingston Family Trust Ltd.
Waikii Ventures Inc.
Leonard J. Mascari
Yamasa Company Ltd.
TR Sather
Marion K. Humphreys
Richard Gomes
First Hawaiian Bank Trustee
Cox Enterprises

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Rana Productions, Ltd. *Biological Surveys of the Proposed State of Hawaii Anuenue Tower Site, Kaupulehu, North Kona District, Island of Hawaii.* Prepared for Wilson Okamoto Corporation. April, 2008.

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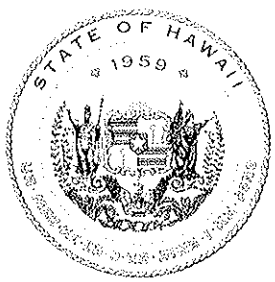
US Department of Agriculture Soil Conservation Service. *Soil Survey of Island of Hawaii, State of Hawaii.* December 1973.

US Department of the Navy Naval Space Command. *Final Environmental Impact Statement for Electronic Installations in the Western Pacific.* June 1990.



APPENDIX A

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FORT SHAFTER, HAWAII 96858-5440

REPLY TO ATTENTION OF:

February 5, 2008

(7739-01)
2/11/08 BG

Regulatory Branch

File No. POH-2008-27

cc: DAGS e-m

John L. Sakaguchi
Wilson Okamoto Corporation
1907 South Beretania Street, Suite #400
Honolulu, HI 96826

RECEIVED
FEB 07 2008
WILSON OKAMOTO CORPORATION

Dear Mr. Sakaguchi:

This letter is in response to your request for comments dated December 28, 2007 for a proposed telecommunications tower about 9 miles northeast of Kailua-Kona and about 2.2 miles directly up hill from the 29-mile marker on Mamalahoa Highway (TMK: (3) 7-2-02:001). We have reviewed the information you provided under the Corps' authority to issue Department of the Army (DA) permits pursuant to Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 USC 403) and Section 404 of the Clean Water Act (CWA) (33 USC 1344).

Based on the information you provided, we have determined that the proposed project site does not contain waters of the U.S. subject to our jurisdiction, and that the described project and its related activities are understood to not involve the placement of dredged and/or fill material into waters of the U.S., including adjacent wetlands; therefore, a Department of the Army (DA) permit is not required.

As a general practice, best management practices should be implemented during project construction to minimize erosion, to avoid the discharge of storm water from impacting adjacent waters of the U.S., and to ensure continued protection of identified aquatic resources, including any wetlands identified on the NWI.

Should you have any questions regarding this jurisdictional determination, please contact Ms. Paulette Choy at 438-9258 and reference the file number.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

WILSON OKAMOTO CORPORATION
1907 South Beretania Street
Artesian Plaza, Suite 400
Honolulu, Hawaii 96826 USA
Phone 808.946.2277
Fax 808.946.2253
www.wilsonokamoto.com

7739-01
March 13, 2008

Mr. George P. Young, P.E., Chief, Regulatory Branch
Department of the Army
U.S. Army Engineer District, Honolulu
Fort Shafter, Hawaii 96858-5440

Attention Ms. Paulette Choy

Subject: Draft Environmental Assessment (EA), Pre-Assessment Consultation
Information and Communications Services Division-Anuenue Radio Sites and Towers: Kaupulehu Site, North Kona District, Island of Hawaii;
DAGS JOB No. 11-10-0477; Tax Map Key: 7-2-002:001
Response to Comment

Dear Mr. Young:

Thank you for your February 5, 2008 comment letter (File No. POH-2008-27) regarding the proposed Anuenue Radio Sites and Towers, Kaupulehu Site project. The Draft EA will note that the proposed project site does not contain waters of the U.S. or involve placement of dredged and/or fill material into waters of the U.S., and will note that a DA permit will not be required under Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act, 33 USC 1344.

The Draft EA will note the construction plans and specifications will include best management practices (BMPs) to minimize erosion on the site during and after construction and will also include measures to contain runoff on-site during the construction period. Also, the Draft EA will note the project site is located at elevation 3300 feet mean sea level within an area composed of a'a lava flows. As such, aquatic resources, wetlands, and surface water resources are not located on the project site or in the vicinity.

We appreciate your participation in the EA review process.

If you have any questions, please call me at 808.946.2277 or fax to 808.946.2253.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

JS/jm

cc: D. Jandoc, DAGS

7739-01
1/31/08

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122, Box 50088
Honolulu, Hawaii 96850

In Reply Refer To:
2008-TA-0082

RECEIVED
JAN 31 2008
WILSON OKAMOTO CORPORATION

JAN 30 2008

cc: DAGS
RAPA) en

Mr. John L. Sakaguchi
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Subject: Draft Environmental Assessment – Anuenue Radio Sites and Towers, Kaupulehu Site, North Kona, Hawaii

Dear Mr. Sakaguchi:

Thank you for your letter dated December 24, 2007, providing us an opportunity to comment on the development of an Environmental Assessment for the proposed State of Hawaii Department of Accounting and General Services Information and Communications Services Division Anuenue Radio Sites and Towers in Kaupulehu, North Kona, Hawaii. We received your letter on December 27, 2007. The proposed activity includes the installation of a 120 to 140-foot self supported tower with 12 to 14 microwave dishes and other antennas, the construction of a 900-square foot 12-foot high building, and installation of other support facilities such as an outdoor diesel fuel tank.

We searched our databases, including data compiled by the Hawaii Biodiversity and Mapping Program and pertinent information in our files, and several species are known to occur near the proposed project area. The endangered Hawaiian hoary bat (*Lasiurus cinerus semotus*), Hawaiian goose (*Branta sandvicensis*), and Hawaiian hawk (*Buteo solitarius*) have been observed in the area of the proposed tower. Three seabirds, the endangered Hawaiian petrel (*Pterodroma sandwichensis*), the threatened Newell's shearwater (*Puffinus auricularis newelli*), and a candidate species, the Band-rumped storm-petrel (*Oceanodroma castro*) may use the project area while transiting to nesting colonies. These seabirds are attracted to lighted structures and can collide with buildings, light poles, wires, and other tall objects. Communications towers can pose a potential hazard for birds protected under the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 et seq.), as amended or the Migratory Bird Treaty Act (16 U.S.C. 703-712).

We offer the following recommendations related to your request for technical assistance for endangered or threatened species in the proposed project area.

1. We recommend that you hire a qualified biologist to survey for federally protected species, gather more biological information about this site, and request that you incorporate this information into your draft Environmental Assessment.
2. We recommend that you incorporate conservation measures into your project design that avoid or minimize potential impacts from the proposed project to federally protected species. To assist with the development of conservation measures, we suggest you review the "*Service Guidance on the Siting, Construction, Operation and Decommissioning of Communications Towers*" available on the web at http://www.fws.gov/migratorybirds/issues/towers/comtow.html and "*Service Interim Guidance on Avoiding and Minimizing Wildlife Impacts from Wind Turbines*" available at http://www.fws.gov/habitatconservation/wind.pdf. While your project does not include a wind turbine, the avoidance and minimization strategies may be applicable to your project design.
3. We recommend that all construction is completed during day light hours and any security lighting for the building and support facilities be downsheilded. Many species including seabirds and bats are attracted to artificially lighted areas. These two conservation measures reduce the likelihood of attraction to the area.
4. Species specific conservation measures may need to be incorporated into your project design. We can provide recommendations based upon the results of the recommended biological surveys.
5. The proposed project has the potential to adversely affect federally listed species. If the proposed project is funded, authorized, or carried about by a Federal agency, you should request that the Federal agency consult with us under section 7(a)(2) of the ESA. If no Federal agencies are involved with the proposed project, you may apply for an incidental take permit under section 10(a)(1)(B) of the ESA. A section 10 permit application must include a habitat conservation plan laying out the proposed actions, determine the effects of the action of the affected fish and wildlife species and their habitats, and define measures to minimize and mitigate adverse effects.

We appreciate your efforts to conserve endangered species. If you have questions, please contact Megan Laut, Fish and Wildlife Biologist, Consultation and Technical Assistance Program (phone: 808-792-9400; fax: 808-792-9581).

Sincerely,

Patrick Leonard
Field Supervisor

WILSON OKAMOTO CORPORATION
1907 South Beretania Street
Suite 400
Honolulu, Hawaii 96826-1331
Telephone: 808.946.2277
Fax: 808.946.2253
www.wilsonokamoto.com

7739-10
March 13, 2008

Mr. Patrick Leonard, Field Supervisor
Pacific Islands Fish and Wildlife Office
U.S. Department of the Interior
Fish and Wildlife Service
300 Ala Moana Boulevard, Room 3-122, Box 50088
Honolulu, Hawaii 96850

Subject: Draft Environmental Assessment, Pre-Assessment Consultation
Information and Communications Services Division-Anuenue Radio Sites and Towers: Kaupulehu Site, North Kona District, Island of Hawaii;
DAGS JOB No. 11-10-0477; Tax Map Key: 7-2-002:001
Response to Comment

Dear Mr. Leonard:

Thank you for your January 30, 2008 comment letter regarding the proposed Anuenue Radio Sites and Towers, Kaupulehu Site project. The Draft EA, which is being prepared to fulfill the requirements of Chapter 343, Hawaii Revised Statutes, will include the information from the US Fish and Wildlife Service (USFWS) data sources regarding the listed species (endangered Hawaiian hoary bat, Hawaiian goose, Hawaiian hawk) observed in the area of the proposed facility. The Draft EA will also note three seabirds, (endangered Hawaiian petrel, threatened Newell's shearwater, and candidate Band-rumped storm-pertel) may use the area of the proposed facility while transiting to nesting colonies.

We have followed up with the State of Hawaii Department of Accounting and General Services (DAGS) regarding the Federal license for frequencies assigned to the tower. On January 21, 2004, DAGS was issued a radio station authorization for the Kaupulehu site from the Federal Communications Commission Public Safety and Homeland Security Bureau. Thus, at this time, no further Federal license will be needed to operate the frequency assigned to the Kaupulehu site.

The Draft EA will set forth that the DAGS tower will not include lighting which might attract the birds and the 4-sided tower will be self supported (no guy wires). Also, the Draft EA will note the presence of a total of five other existing 100-foot high towers within 700 feet of the DAGS Kaupulehu project site.

The appropriate findings and mitigation measures from the recommended documents at the USFWS web sites will be incorporated in the Draft EA and in the design documents for the facility. The Draft EA and design documents will note the recommendation to undertake the construction work during day light hours and that security lighting for the equipment building will be downshielded to reduce the attraction of the facility for birds which might be in the area.

We appreciate your participation in the EA review process.

If you have any questions, please call me at 808.946.2277 or fax to 808.946.2253.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

JS/jm

cc: D. Jandoc, DGAS
R. David, Rana Productions

Q:\WOC\7739-10 Kaupulehu\ea Folder\PRE assmt\pre assmt rsp\usfws LT-3.doc; 3/13/2008

LINDA LINGLE
GOVERNOR

MAJOR GENERAL ROBERT G. F. LEE
DIRECTOR OF CIVIL DEFENSE

EDWARD T. TEIXEIRA
VICE DIRECTOR OF CIVIL DEFENSE

7739-01
1/31/08
BG
JS
cc: DAGS
em

STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE DIRECTOR OF CIVIL DEFENSE
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAII 96816-4495

PHONE (808) 733-4300
FAX (808) 733-4287

January 30, 2008

Mr. John L. Sakaguchi, AICP, Senior Planner
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Sakaguchi:

State Civil Defense (SCD) strongly supports the planned development of the DAGS Radio Site and Tower at Kaupulehu.

This project supports critical system connectivity needs for Emergency Management and Homeland Security needs Statewide, including the Anuenue digital upgrade of the old Rainbow Microwave system that must be decommissioned.

The completion of this Kaupulehu Radio Site is essential to the modernization efforts of the State to support emergency communications needs.

Please direct questions regarding this input to Mr. George Burnett, SCD Telecommunications Branch Chief, at 733-4300, ext 530.

Sincerely,

EDWARD T. TEIXEIRA
Vice Director of Civil Defense

c: DAGS Project Management Branch
Robert Hlivak, DAGS/ICSD

WILSON OKAMOTO CORPORATION
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826 USA
Phone: 808.946.2277
Fax: 808.946.2253
www.wilsonokamoto.com

7739-01
March 1, 2008

Mr. Edward T. Teixeira, Vice Director of Civil Defense
Office of the Director of Civil Defense
State of Hawaii
Department of Defense
3949 Diamond Head Road
Honolulu, Hawaii 96816-4495

Subject: Draft Environmental Assessment, Pre-Assessment Consultation
Information and Communications Services Division-Anuenue Radio Sites and Towers: Kaupulehu Site, North Kona District, Island of Hawaii; DAGS JOB No. 11-10-0477; Tax Map Key: 7-2-002:001
Response to Comment

Dear Mr. Teixeira:

Thank you for your January 30, 2008 comment letter regarding the proposed Anuenue Radio Sites and Towers, Kaupulehu Site project. The Draft EA will note the Office of Civil Defense supports the planned development of the Information and Communications Services Division-Anuenue Radio Sites and Towers at the Kaupulehu project site. Also, the Draft EA will note the project supports the critical connectivity needs of Emergency Management and Homeland Security needs Statewide.

The Draft EA will also state the Kaupelehu site is essential to the modernization efforts for the State to support emergency communication needs.

A copy of the Draft EA will be sent to your office for review. We appreciate your participation in the EA review process.

If you have any questions, please call me at 808.946.2277 or fax to 808.946.2253.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

JS/jm
cc: D. Jandoc

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 23, 2008

739-01
1/26/08
CC: DAGS, em

RECEIVED
JAN 25 2008
WILSON OKAMOTO CORPORATION

Wilson Okamoto Corporation
1907 South Beretania Street Suite 400
Honolulu, Hawaii 96826

Attention: Mr. John Sakaguchi

Gentlemen:

Subject: Pre-Assessment Draft Environmental Assessment for Information and Communications Services Division-Anuenue Radio Sites and Towers, North Kona, Hawaii, Tax Map Key: (3) 7-2-2:1

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comment.

Other than the comments from Division of Forestry & Wildlife, Engineering Division, Commission on Water Resource Management, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

Charlene E. Unoki

for Morris M. Atta
Administrator

1/5

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 3, 2008

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
x Engineering Division
x Div. of Forestry & Wildlife
__Div. of State Parks
x Commission on Water Resource Management
__Office of Conservation & Coastal Lands
x Land Division – Hawaii District

RECEIVED
LAND DIVISION
2008 JAN 11 A 9:22
DEPT OF LAND AND NATURAL RESOURCES
STATE OF HAWAII

FROM: for Morris M. Atta Charlene
SUBJECT: Pre-assessment for Draft Environmental Assessment for Proposed Anuenue Radio Sites and Towers
LOCATION: North Kona, Hawaii, TMK: (3) 7-2-2:1
APPLICANT: Wilson Okamoto Corporation on behalf of DAGS

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by January 20, 2008.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

(X) We have no objections.
( ) We have no comments.
( ) Comments are attached.

Signed: Paul J. Conry
Date:

PAUL J. CONRY, ADMINISTRATOR
DIVISION OF FORESTRY AND WILDLIFE
JAN - 9 2008

3

7739-01
March 1, 2008

Mr. Paul J. Conry, Administrator
Division of Forestry and Wildlife
Department of Land and Natural Resources
State of Hawai'i
1151 Punchbowl Street
Honolulu, Hawai'i 96813

Subject: Draft Environmental Assessment (EA), Pre-Assessment Consultation Information and Communications Services Division - Anuenue Radio Sites and Towers: Kaupulehu Site, North Kona District, Island of Hawaii; DAGS JOB No. 11-10-0477; Tax Map Key: 7-2-002:001 Response to Comment

Dear Mr. Conry:

Thank you for your January 9, 2008 comment letter regarding the proposed Anuenue Radio Sites and Towers, Kaupulehu Site project. The Draft EA will note that the Division of Forestry and Wildlife does not have any objections.

We appreciate your participation in the EA review process. If you have any questions, please call me at 808.946.2277 or fax to 808.946.2253.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

JL/jm

cc: D. Jandoc

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

RECEIVED
LAND DIVISION
2008 JAN 14 A 10: 31

'08 JAN 03 PM 03:36 ENGINEERING

January 3, 2008

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__~~Div. of Boating & Ocean Recreation~~
x Engineering Division
x Div. of Forestry & Wildlife
__Div. of State Parks
x Commission on Water Resource Management
__Office of Conservation & Coastal Lands
x Land Division – Hawaii District

FROM: Morris M. Atta
SUBJECT: Pre-assessment for Draft Environmental Assessment for Proposed Anuenue Radio Sites and Towers
LOCATION: North Kona, Hawaii, TMK: (3) 7-2-2:1
APPLICANT: Wilson Okamoto Corporation on behalf of DAGS

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by January 20, 2008.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

( ) We have no objections.
( ) We have no comments.
(X) Comments are attached.

Signed:
Date: 1/11/08

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/MorrisAtta
REF: Pre-AssessDEAUtilityAnuenueRadio&Tower
Hawaii.367

COMMENTS

( ) We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ___.

(X) **Please take note that based on the map that you provided the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone X. The National Flood Insurance Program does not have any regulations for developments within Zone X.**

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

( ) Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

( ) Mr. Robert Sumitomo at (808) 768-8097 or Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.
( ) Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.
( ) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
( ) Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.

( ) The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

( ) Additional Comments: _____

( ) Other: _____

Should you have any questions, please call Ms. Suzie Agraan of the Planning Branch at 587-0258.

Signed: _____
ERIC T. HIRANO, CHIEF ENGINEER

Date: 11/11/08

WILSON OKAMOTO CORPORATION
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826-1661
Phone: 808.946.2277
Fax: 808.946.2253
www.wilsonokamoto.com

7739-01
March 3, 2008

Mr. Eric T. Hirano, Chief Engineer
Engineering Division
Department of Land and Natural Resources
State of Hawai'i
1151 Punchbowl Street
Honolulu, Hawai'i 96813

Subject: Draft Environmental Assessment, Pre-Assessment Consultation
Information and Communications Services Division - Anuenue Radio Sites and Towers: Kaupulehu Site, North Kona District, Island of Hawaii;
DAGS JOB No. 11-10-0477; Tax Map Key: 7-2-002:001
Response to Comment

Dear Mr. Hirano:

Thank you for your January 11, 2008 comment letter regarding the proposed Anuenue Radio Sites and Towers, Kaupulehu Site project. The Draft Environmental Assessment (EA) will note that:

According to the Flood Insurance Rate Map, the project site is located in Zone X. The National Flood Insurance Program does not have any regulations for developments in Zone X.

We appreciate your participation in the Draft EA process. If you have any questions, please call me at 808.946.2277 or fax to 808.946.2253.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

JL/jm

cc: D. Jandoc

LINDA LINGLE
GOVERNOR OF HAWAII

LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RECEIVED
08 JAN 3 AM : 20

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 3, 2008

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
_x_ Engineering Division
_x_ Div. of Forestry & Wildlife
~~__Div. of State Parks~~
_x_ Commission on Water Resource Management
~~__Office of Conservation & Coastal Lands~~
_x_ Land Division – Hawaii District

RECEIVED
2008 JAN -8 A 9:11
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII
LAND DIVISION

FROM: Morris M. Atta
SUBJECT: Pre-assessment for Draft Environmental Assessment for Proposed Anuenue Radio Sites and Towers
LOCATION: North Kona, Hawaii, TMK: (3) 7-2-2:1
APPLICANT: Wilson Okamoto Corporation on behalf of DAGS

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by January 20, 2008.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

( ) We have no objections.
(✓) We have no comments.
( ) Comments are attached.

Signed: Edwin T. Sakoda
Date: 1/7/08

2

WILSON OKAMOTO CORPORATION

7739-01
March 3, 2008

Mr. Edwin T. Sakoda
Division of Water Resources Managment
State of Hawaii
Department of Land and Natural Resources
1151 Punchbowl Street
Honolulu, Hawai'i 96813

Subject: Draft Environmental Assessment, Pre-Assessment Consultation
Information and Communications Services Division-Anuenue Radio Sites and Towers: Kaupulehu Site, North Kona District, Island of Hawaii;
DAGS JOB No. 11-10-0477; Tax Map Key: 7-2-002:001
Response to Comment

Dear Mr. Sakoda:

Thank you for your January 7, 2008 comment letter regarding the proposed Anuenue Radio Sites and Towers, Kaupulehu Site project. The Draft Environmental Assessment (EA) will note that the Division of Water Resources Management had no comments.

We appreciate your participation in the Draft EA process. If you have any questions, please call me at 808.946.2277 or fax to 808.946.2253.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

JL/jm

cc: D. Jandoc

LINDA LINGLE
GOVERNOR
STATE OF HAWAII

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P.O. BOX 1879
HONOLULU, HAWAII 96805

(7739-01)
1/16/08

MICAH A. KANE
CHAIRMAN
HAWAIIAN HOMES COMMISSION

BEN HENDERSON
DEPUTY TO THE CHAIRMAN

KAULANA H. PARK
EXECUTIVE ASSISTANT

cc: DAGS
em

JS

January 8, 2008

RECEIVED
JAN 10 2008
WILSON OKAMOTO CORPORATION

Mr. John L. Sakaguchi, AICP
Senior Planner
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826

Dear Mr. Sakaguchi:

Thank you for the opportunity to review the project summary sheet for Department of Accounting and General Services, Information and Communications Services Division's proposed Anuenue Radio Sites and Towers project at Kaupulehu located in North Kona, Hawaii. The Department of Hawaiian Home Lands has no comments.

Should you have any questions, please call the Planning Office at (808) 586-3836.

Aloha and mahalo,

Micah A. Kane, Chairman
Hawaiian Homes Commission

jm

WILSON OKAMOTO CORPORATION
1907 South Beretania Street, Suite 400
Honolulu, Hawaii 96826
Phone: 808.946.2277
Fax: 808.946.2253
www.wilsonokamoto.com

7739-01
March 3, 2008

Mr. Micah A. Kane, Chairman
Department of Hawaiian Homelands
State of Hawaii
P.O. Box 1879
Honolulu, Hawaii 96805

Subject: Draft Environmental Assessment (EA), Pre-Assessment Consultation
Information and Communications Services Division-Anuenue Radio Sites and Towers: Kaupulehu Site, North Kona District, Island of Hawaii;
DAGS JOB No. 11-10-0477; Tax Map Key: 7-2-002:001
Response to Comment

Dear Mr. Kane:

Thank you for your January 8, 2008 comment letter regarding the proposed Anuenue Radio Sites and Towers, Kaupulehu Site project. The Draft EA will note that the Department of Hawaiian Homelands had no comments.

We appreciate your participation in the EA review process. If you have any questions, please call me at 808.946.2277or fax to 808.946.2253.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

JS/jm

cc: D. Jandoc

PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

7739-01

cc: DKS am

RECEIVED
JAN 25 2008
WILSON OKAMOTO CORPORATION

HRD07/3464

January 23, 2008

Wilson Okamoto Corporation
Attn: John L. Sakaguchi, AICP
1907 South Beretania Street, Suite 400
Honolulu, Hawai'i 96826

RE: Draft Environmental Assessment, Pre-Assessment Consultation; Information and Communications Services Division—Anuenue Radio Sites and Towers; DAGS JOB No. 11-10-0477; Kaupulehu Site, North Kona District, Island of Hawai'i; Tax Map Key: 7-2-002:001

Aloha nō e Mr. Sakaguchi,

The Office of Hawaiian Affairs ("OHA") is in receipt of your December 28, 2007 letter soliciting comments on the above-referenced project, and offers the following:

As you may know, the Hawai'i State Constitution mandates the protection and preservation of Native Hawaiian cultural assets, landscapes and sites, burials and funerary objects, traditional practices and access rights, among other things. This mandate constitutes one of OHA's primary kuleana.

An Environmental Assessment ("EA"), in accordance with Chapter 343 of the Hawaii Revised Statues, should include a Cultural Impact Assessment ("CIA"). In accordance with the requirement of Act 50, Session Laws of Hawaii 2000, a CIA shall include information relating to the practices and beliefs of the Native Hawaiians who once inhabited the area(s), and it is recommended that community involvement be included in this assessment. We refer you to Ruby McDonald, Cultural Resource Coordinator in OHA's Kona office, who can be reached at (808) 327-9525, to further assist you in this project area. The Hawai'i Island office of the State Historic Preservation Division ("SHPD") should also be consulted.

OHA asks that, in accordance with Section 6E-46.6, HRS and Chapter 13-300, Hawaii Administrative Rules, if the project moves forward, and if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and SHPD shall be contacted. OHA would also like to be notified.

Upon completion of this segment to the project, OHA thanks you in advance and respectfully requests a hardcopy of the draft EA, addressed to my attention. OHA hopes to be consulted on this matter in the future as more information becomes available and the project progresses.

Thank you for the opportunity to comment. If you have any further questions and/or concerns, please contact Jerome Yasuhara, Policy Advocate in the Native Rights, Land and Culture Hale, at (808) 594-0239 or via email at jeromey@oha.org.

'O wau iho nō, me ka ha'aha'a,

Clyde W. Nāmu'o
Administrator

C: Ruby McDonald, OHA—Kona Office

7739-01
March 3, 2008

Mr. Clyde Nāmu'o, Administrator
Office of Hawaiian Affairs
State of Hawaii
711 Kapiolani Blvd. Suite 500
Honolulu, Hawaii 96813

Subject: Draft Environmental Assessment, Pre-Assessment Consultation
Information and Communications Services Division-Anuenue Radio Sites and Towers: Kaupulehu Site, North Kona District, Island of Hawaii;
DAGS JOB No. 11-10-0477; Tax Map Key: 7-2-002:001
Response to Comment

Dear Mr. Nāmu'o:

Thank you for your January 23, 2008 comment letter (HRD07/3464) on the Pre-Assessment Consultation for the Draft Environmental Assessment (EA) for the Anuenue Radio Sites and Towers, Kaupulehu Site project. We have the following responses to your comments:

The Draft EA will be prepared to meet the requirements of Chapter 343, Hawaii Revised Statutes, as amended, and Hawaii Administrative Rules Title 11, State of Hawaii Department of Health, Chapter 200, Environmental Impact Statement Rules. As such, the Draft EA will contain a Cultural Impact Assessment (CIA) which will include community involvement in the form of interviews of persons knowledgeable about the history, beliefs, and practices related to the area. The Cultural Resource Coordinator in the OHA Kona office will be contacted to as part of the CIA study.

The Draft EA will note that, the general notes in the contract drawings and specifications will state that, should archaeological sites such as walls, platforms, pavements or mounds, or remains such as artifacts, burials, concentrations of shell or charcoal be encountered during construction activities, work shall cease immediately and the find shall be protected from further damage. The contractor shall immediately contact State Historic Preservation Division, who will assess the significance of the find and recommend an appropriate mitigation measure, if necessary.

A copy of the Draft EA will be sent to your office for review. We appreciate your participation in the EA review process.

If you have any questions, please call me at 808.946.2277 or fax to 808.946.2253.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

JS/jm

cc: D. Jandoc

Q:\WOC\7739-10 Kaupulehu\ea Folder\PRE assmt\pre assmt rsp\oha LT-2.doc; 3/2/2008

Harry Kim
Mayor

7739-01
1/31/08
JS BG
cc: DAGS em

County of Hawai'i
CIVIL DEFENSE AGENCY
920 Ululani Street · Hilo, Hawaii 96720-3958
(808) 935-0031 · Fax (808) 935-6460

January 28, 2008

RECEIVED
JAN 30 2008
WILSON OKAMOTO CORPORATION

John L. Sakaguchi, AICP, Senior Planner
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawai'i 96826

Re: Draft Environmental Assessment, Pre-Assessment Consultation
Anuenue Radio Sites and Towers, DAGS Job No. 11-10-0477
Kaupulehu Site, North Kona
Tax Map Key: 7-2-002:001

Dear Mr. Sakaguchi:

The Civil Defense Agency has no comments.

Aloha,

Harry Kim

Harry Kim
Mayor and Acting Civil Defense Administrator

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WILSON OKAMOTO CORPORATION
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7739-01
March 3, 2008

Mr. Harry Kim,
Mayor and Acting Civil Defense Administrator
County of Hawaii
Civil Defense Agency
920 Ululani Street
Hilo, Hawaii 96720-3958

Subject: Draft Environmental Assessment (EA), Pre-Assessment Consultation
Information and Communications Services Division-Anuenue Radio Sites and Towers: Kaupulehu Site, North Kona District, Island of Hawaii;
DAGS JOB No. 11-10-0477; Tax Map Key: 7-2-002:001
Response to Comment

Dear Mr. Kim:

Thank you for your January 28, 2008 comment letter regarding the proposed Anuenue Radio Sites and Towers, Kaupulehu Site project. The Draft EA will note that the Civil Defense Agency did not have any comments.

We appreciate your participation in the EA review process. If you have any questions, please call me at 808.946.2277 or fax to 808.946.2253.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

JS/jm

cc: D. Jandoc, DAGS

Harry Kim
Mayor

7739-01

Lawrence K. Mahuna
Police Chief

1/22/08

Harry S. Kubojiri
Deputy Police Chief

cc: DAGS env.

JS

County of Hawaii

POLICE DEPARTMENT
349 Kapiolani Street • Hilo, Hawaii 96720-3998
(808) 935-3311 • Fax (808) 961-8865

January 17, 2008

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JAN 22 2008
WILSON OKAMOTO CORPORATION

Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, HI 96826

Attn: John L. Sakaguchi, AICP

Dear Mr. Sakaguchi:

The Hawaii Police Department supports the proposed construction at Kaupulehu to support the modernization of the Information and Communications Services Division-Anuenue Radio Sites and Towers.

We appreciate the opportunity to comment on this proposal and look forward to possibly sharing the facility someday.

If you have any questions, please feel free to contact Assistant Chief Paul K. Ferreira, at (808) 961-2261.

Sincerely,

LAWRENCE K. MAHUNA
POLICE CHIEF

LKM:HJT:nam

"Hawai'i County is an Equal Opportunity Provider and Employer"

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7739-01
March 3, 2008

Police Chief Lawrence K. Mahuna
Police Department
County of Hawaii
349 Kapiolani Street
Hilo, Hawaii 96720-3998

Attention: Assistant Chief Paul K. Ferreira

Subject: Draft Environmental Assessment, Pre-Assessment Consultation
Information and Communications Services Division-Anuenue Radio Sites and Towers: Kaupulehu Site, North Kona District, Island of Hawaii;
DAGS JOB No. 11-10-0477; Tax Map Key: 7-2-002:001
Response to Comment

Dear Chief Mahuna:

Thank you for your January 17, 2008 comment letter regarding the proposed Anuenue Radio Sites and Towers, Kaupulehu Site project. The Draft EA will note the County of Hawaii Police Department supports the proposed construction at Kaupulehu to support modernization of the Information and Communications Services Division-Anuenue Radio Sites and Towers and that the Police Department looks forward to sharing the facility.

A copy of the Draft EA will be sent to your office for review. We appreciate your participation in the EA review process.

If you have any questions, please call me at 808.946.2277 or fax to 808.946.2253.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

JS/jm

cc: D. Jandoc, DAGS

Harry Kim
Mayor

Christopher J. Yuen
Director

Brad Kurokawa, ASLA
LEED® AP
Deputy Director

County of Hawaii
PLANNING DEPARTMENT
101 Pauahi Street, Suite 3 • Hilo, Hawaii 96720-4224
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7736-01

2/11/08

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FEB 07 2008
WILSON OKAMOTO CORPORATION

cc: DAGS em

February 6, 2008

Mr. John L. Sakaguchi
Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu HI 96826

Dear Mr. Sakaguchi:

Subject:	**Pre-Environmental Assessment Consultation**
Applicant:	**Hawaii, Department of Accounting & General Services (DAGS), Information & Communications Services Division (ICSD)**
Project:	**Anuenue Radio Sites and Towers**
TMK:	**7-2-2:1, Kaupulehu, North Kona, Hawaii**

This is in response to your request for comments on the above-referenced project.

The project will support the rebuilding and modernization of the ICSD-owned portion of the Anuenue system, a shared State and Federal microwave system.

We have the following to offer:

1. We concur with the land use designations and that it is outside of the County's Special Management Area (SMA).

2. On the adjacent parcel, TMK: 7-2-2:13, Special Permit No. 1126 (SPP 1126) was approved by the Planning Commission at a public hearing held on October 29, 2001 to "allow the existing telecommunication facilities consisting of HELCO's two 100-foot lattice towers and co-located facilities of the State of Hawaii and the County of Hawaii, Sun Cablevision's 65-foot lattice and 20-foot guyed tower, GST Telecom's 100-foot lattice tower, antennas, equipment buildings and accessory structures".

A. ICSD is currently co-located on this tower. Therefore, discussion should also address the existing and proposed ICSD telecommunication systems.

B. Discuss the presence or absence of xenoliths associated with the Ka'upulehu lava flow.

Please provide us with a copy of the Draft Environmental Assessment for our review and file.

If you have questions, please feel free to contact Esther Imamura of this office at 961-8288, extension 257.

Sincerely,

CHRISTOPHER J. YUEN
Planning Department

ETI:cs
P:\wpwin60\ETI\EAdraftPre-consul\Sakaguchi Kaupulehu2 7-2-2-1.rtf

xc: Planning Department, Kona

WILSON OKAMOTO CORPORATION
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7739-10
March 21, 2008

Mr. Chrostopher J. Yuen, Director
Planning Department
County of Hawaii
101 Pauahi Street, Suite 3
Hilo, Hawaii 96720-4224

Attention: Ms. Esther Imamura

Subject: Draft Environmental Assessment, Pre-Assessment Consultation
Information and Communications Services Division-(ICSD) Anuenue Radio Sites and Towers: Kaupulehu Site, North Kona District, Island of Hawaii; DAGS JOB No. 11-10-0477; Tax Map Key: 7-2-002:001
Response to Comment

Dear Mr. Yuen:

Thank you for your February 6, 2008 comment letter on the Pre-Assessment Consultation for the Draft Environmental Assessment (EA) for the Anuenue Radio Sites and Towers, Kaupulehu Site project to be developed by the State of Hawaii Department of Accounting and General Services (DAGS) . We have the following responses to your comments:

1. The verification of the land use designation outside of the Special Management Area will be included in the Draft EA.

2.A. The Draft EA will include a discussion of the existing and proposed Anuenue system, including the purpose and need for the project to support public safety and public agency radio systems. The Draft EA will indicate that the existing co-location agreement between Hawaii Electric Light Co. (HELCO) and the State of Hawaii limits the number of antenna positions available to the State on the HELCO tower. The existing co-location agreement also limits the number of equipment racks that can be installed by the State at the HELCO facility. However, regardless of the limitations imposed by that agreement, the HELCO facility has insufficient antenna positions, floor space, and backup power reserves to support the Anuenue and future State radio systems. Given the conflicts related to the antennas on the tower and the space in the equipment building, there is the need for DAGS to proceed with construction of the Kaupulehu facility.

The antenna plan developed by DAGS shows a total of 14 microwave antennas to be mounted on the tower. This includes the microwave antennas to replace those

used by the State of Hawaii and the County of Hawaii that are currently on the adjacent HELCO tower. The existing HELCO 100 foot 4-leg tower shows a total of 18 microwave antennas. The HELCO tower could not accommodate the additional requirement for the 14 DAGS microwave antennas

The Draft EA will also state that the DAGS specifications require the Anuenue Radio system building, tower, and antennas remain operational at wind speeds up to 110 miles per hour (mph) and the facilities survive wind speeds up to 155 mph. Wind speeds of 110 mph are the highest sustained winds expected in a Safir-Simpson Category 2 hurricane. Wind speeds of 155 mph are the highest reached in a Safir-Simpson Category 4 hurricane.

It is believed that the HELCO tower would not meet the 155 mph wind survival requirement. Thus, there is the need for the DAGS facility, including the tower.

2.B. The Draft EA will include a discussion of xenoliths. Generally, xenoliths are foreign rock fragments that become embedded in larger rock during its formation. During volcanic eruption, rock fragments from walls of the magma chamber or along the lava flow conduit may come loose and engulfed in the flowing lava, resulting in the formation of xenoliths.

The project site is located within the Kaupulehu lava flow of 1800 to 1801, which is known to contain an abundance of xenoliths, especially in areas mauka of Mamalahoa Highway. The xenoliths of dunite, peridotite and gabbro are commonly found within Kaupulehu lava flows. The individual inclusions ranging from about 0.5 to 12 inches across have been commonly found within the Kaupulehu flow.

A copy of the Draft EA will be sent to your office for review. We appreciate your participation in the EA review process. If you have any questions, please call me at 808.946.2277 or fax to 808.946.2253.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner
JS/jm
cc: D. Jandoc

Harry Kim
Mayor

Bruce C. McClure
Director

Jiro A. Sumada
Deputy Director

County of Hawai'i
DEPARTMENT OF PUBLIC WORKS
Aupuni Center
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January 7, 2008

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WILSON OKAMOTO CORPORATION

John L. Sakaguchi, AICP, Senior Planner
Wilson Okamoto Corporation
1907 S. Beretania St., Artesian Plaza, Ste. 400
Honolulu, Hi. 96826

Subject: Draft Environmental Assessment, Pre Assessment Consultation;
Information and Communications Services Division - Anuenue Radio Sites
And Towers; DAGS JOB No. 11-10-0477; Kaupulehu Site, North Kona
District, Island of Hawaii; TMK:7-2-002:001

We reviewed the subject Draft Environmental Assessment and have no comments to offer at this time..

If you have any questions, please contact Kiran Emler of our Kona office at 327-3530.

Galen M. Kuba, Division Chief
Engineering Division

KE
c: ENG - HILO/KONA
Planning Director

WILSON OKAMOTO CORPORATION
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7739-01
March 3, 2008

Mr. Galen M. Kuba, Division Chief
Engineering Division
Department of Public Works
County of Hawaii
101 Pauahi Street, Suite 7
Hilo, Hawaii 96720-4224

Attention: Mr. Kiran Emler, Engineer

Subject: Draft Environmental Assessment, Pre-Assessment Consultation
Information and Communications Services Division-Anuenue Radio Sites and Towers: Kaupulehu Site, North Kona District, Island of Hawaii;
DAGS JOB No. 11-10-0477; Tax Map Key: 7-2-002:001
Response to Comment

Dear Mr. Kuba:

Thank you for your January 7, 2008 comment letter on the Pre-Assessment Consultation for the Draft Environmental Assessment (EA) for the Anuenue Radio Sites and Towers, Kaupulehu Site project. The Draft EA will note the County of Hawaii Department of Public Works did not have any comments to offer at this time.

We appreciate your participation in the EA review process.

If you have any questions, please call me at 808.946.2277 or fax to 808.946.2253.

Sincerely,

John L. Sakaguchi, AICP, Senior Planner

JS/jm

cc: D. Jandoc

APPENDIX B

7739-10
4/23/08
cc: DAGS
em

Biological Surveys of the Proposed State of Hawai'i, 'Ānuenue Tower Site, Ka'ūpūlehu, North Kona District, Island of Hawai'i.

Prepared by:

Reginald E. David
Rana Productions, Ltd.
P.O. Box 1371
Kailua-Kona, Hawai'i 96745

Prepared for:

Wilson Okamoto Corporation
1907 South Beretania Street, Suite 400
Honolulu, Hawai'i 96826

April 22, 2008

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Introduction

The State of Hawai'i, Department of Accounting and General Services (DAGS) is proposing to build an 150–foot tall radio relay tower and associated infrastructure on an approximately 28,900-square foot project site within lands identified as TMK: 7-2-002:001, located on private property at 'Ānuenue, Ka'ūpūlehu, North Kona District, Island of Hawai'i (Figure 1). The proposed tower and infrastructure will be a significant part of the State's Information Communication Services Division (ICSD) system, a shared State and Federal microwave system. Additionally, the site will support the public safety radio and microwave system of the County of Hawai'i Police Department. This report summarizes the findings of biological surveys conducted on and immediately adjacent to the proposed tower site.

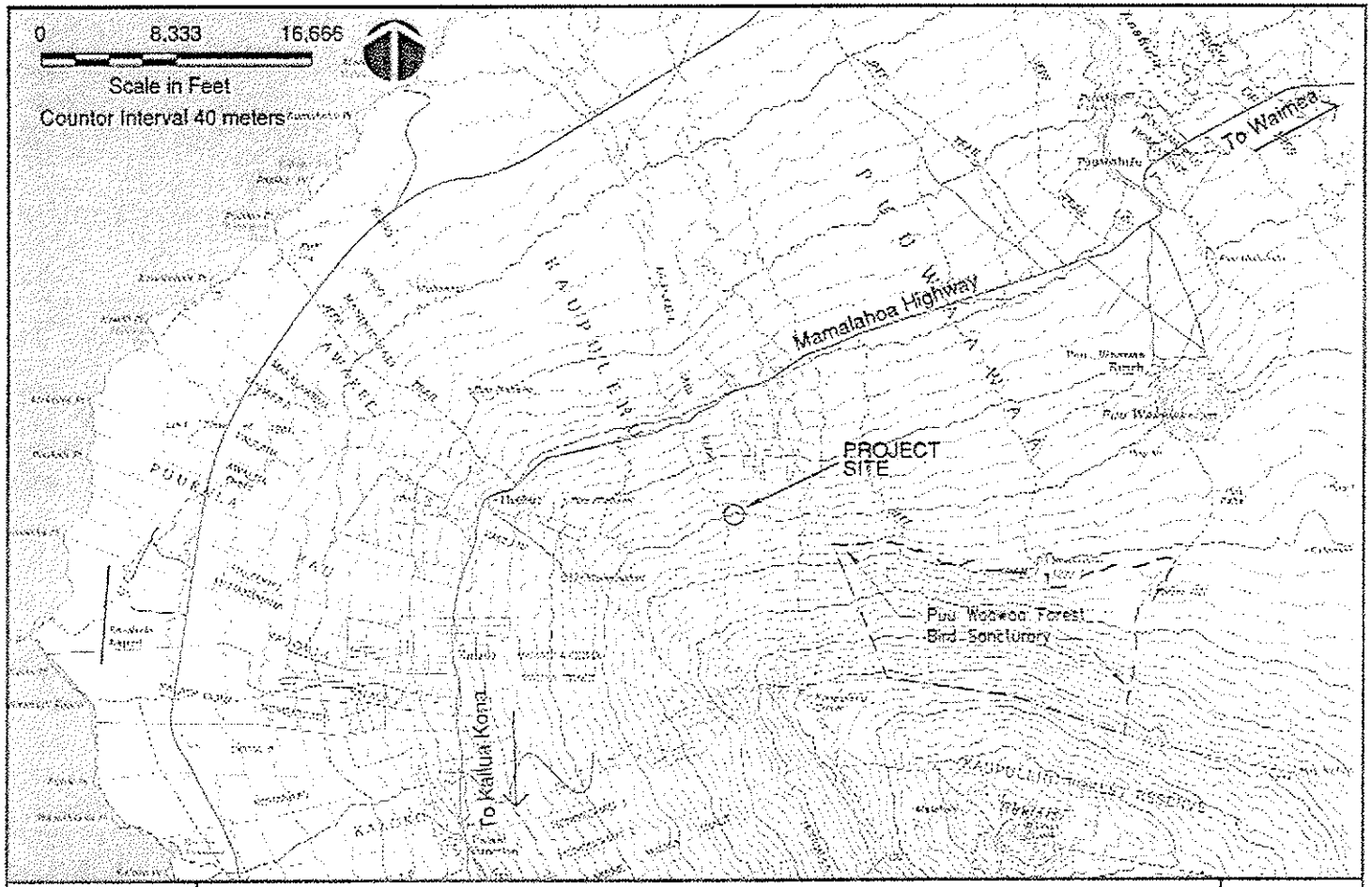
The primary purpose of the surveys was to determine if there were any biological species currently listed as endangered, threatened, or proposed for listing under either the federal or the State of Hawai'i's endangered species programs on, or within the immediate vicinity of the proposed tower site. Federal and State of Hawai'i listed species status follows species identified in the following referenced documents (Division of Land and Natural Resources (DLNR) 1998, Federal Register 2005, U. S. Fish & Wildlife Service (USFWS) 2005, 2008a). Fieldwork was conducted on April 5, 2008.

Avian phylogenetic order and nomenclature follows *The American Ornithologists' Union Check-list of North American Birds 7th Edition* (American Ornithologists' Union 1998), and the 42nd through the 48th supplements to *Check-list of North American Birds* (American Ornithologists' Union 2000; Banks et al. 2002, 2003, 2004, 2005, 2006, 2007). Mammal scientific names follow *Mammals in Hawaii* (Tomich 1986). Plant names follow *Hawai'i's Ferns and Fern Allies* (Palmer, 2003) for ferns, *Manual of the Flowering Plants of Hawai'i* (Wagner et al. 1990, 1999). Place names follow *Place Names of Hawaii* (Pukui et al. 1974).

Hawaiian and scientific names are italicized in the text. A glossary of technical terms and acronyms used in the document, which may be unfamiliar to the reader, are included at the end of the narrative text on Page 13.

General Site Description

The roughly .66-acre site is located at an approximate elevation of 3290-feet above sea level on the north flank of Mount Hualālai (Figure 2). There is an existing paved road connecting the site to the State of Hawai'i's Highway 190. The facility will be sited adjacent to and slightly below an existing communication facility with four towers owned by the Hawaii Electric Light Company (HELCO) (Figure 2). A second communication facility with two towers owned by Hawaiian Telecom is located approximately 1,000 feet to the west and about 40 feet lower than the DAGS site (Figure 2). A portion of the site centered on the proposed towers centerline has been graded (Figure 3). The project area consists of a partially vegetated *'a'ā* flow disgorged from Mount Hualālai between 1,500 and 3,000 years ago (Wolfe and Morris 1996, USGS 1996).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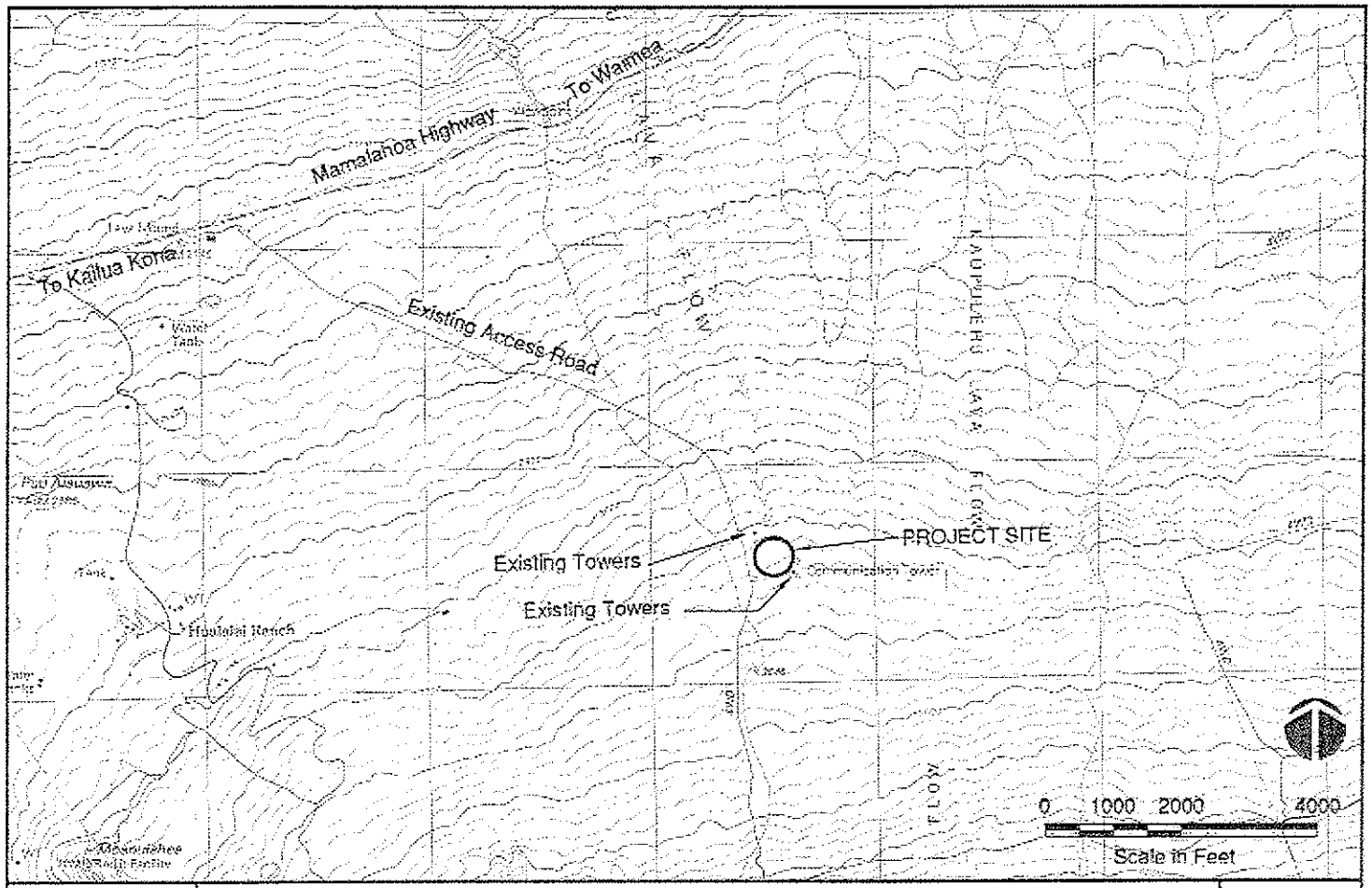
WILSON OKAMOTO CORPORATION
ENGINEERS + PLANNERS
INFORMATION COMMUNICATION SERVICES DIVISION ANUENUE RADIO SITES AND TOWERS, KAUPULEHU SITE
PROJECT LOCATION MAP
FIGURE
1.1



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ENGINEERS • PLANNERS

INFORMATION COMMUNCATION SERVICES DIVISION ANUENUE RADIO SITE AND TOWERS, KAUPULEHU SITE

PROJECT SITE MAP

FIGURE 2

Mammalian Survey Methods

All observations of mammalian species were of an incidental nature. With the exception of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), or *'ōpe'ape'a* as it is known locally, all terrestrial mammals currently found on the Island of Hawai'i are alien species, and most are ubiquitous. The survey of mammals was limited to visual and auditory detection, coupled with visual observation of scat, tracks, and other animal sign. A running tally was kept of all vertebrate species observed and heard within the study area. Visual and electronic scans, using a Broadband AnaBat II® ultrasonic bat detector, were made for bats during crepuscular periods on the evening of April 5, 2008.

Mammalian Survey Results

One mammalian species was detected during the course of this survey. A number of small herds of goat (*Capra h. hircus*) were seen in the general vicinity of the site. Many more goats were seen when traversing from Highway 190 to the site. Hawai'i's sole endemic terrestrial mammalian species, the endangered Hawaiian hoary bat, was not detected during the course of this survey.

Avian Survey Methods

A single avian count station was sited in the center of the project site. One eight-minute point count was conducted at each station. Field observations were made using Leitz 10 X 42 binoculars, and by listening for vocalizations. Counts took place between 07:30 a.m. and 10:30 a.m., the peak of daily bird activity. In an attempt to detect nocturnally flying seabirds over-flying the project area, an additional two hours were spent within the project area on the evening of April 5, 2008. Additionally, a ground search was conducted for bird carcasses around the two existing tower sites, which are located immediately adjacent to this site. The purpose for the ground search was to determine if any birds, in particular Newell's Shearwaters (*Puffinus auricularis newelli*), or Hawaiian Petrels (*Pterodroma sandwichensis*) might have collided with any of the existing communication structures.

Avian Survey Results

A total of 26 individual birds of 7 different species, representing five-separate families were recorded during the station count. One additional species, Pacific Golden-Plover (*Pluvialis fulva*) was recorded as an incidental observation flying over the site while transiting the site. Two of the species recorded, Hawai'i 'Amakihi (*Hemignathus virens*) and Pacific Golden-Plover, are native species. The 'Amakihi is a Big Island endemic honeycreeper. The plover is an indigenous migratory shorebird species that nests in the high Arctic, returning to Hawaii and the Tropical Pacific to spend the fall and winter months each year. The remaining five species detected are considered to be alien to the Hawaiian Islands. (Table 1). Avian diversity and densities were low, though in keeping with the xeric and sparsely vegetated nature of the habitat present on the site. No downed bird carcasses or skeletons were found around the other two communication tower sites.

No avian species currently listed as endangered, threatened, or proposed for listing under either the federal or the State of Hawai'i's endangered species programs were detected during the course of this survey.

Table 1 - Avian Species Detected DAGS 'Ānuenue Tower Site

Common Name	*Scientific Name*	*ST*	*AB*
	GALLIFORMES		
	PHASIANIDAE - Pheasants & Partridges		
	Phasianinae - Pheasants & Allies		
Erckel's Francolin	*Francolinus erckelii*	A	1
	CHARADRIIFORMES		
	CHARADRIIDAE - Lapwings & Plovers		
	Charadriinae - Plovers		
Pacific Golden-Plover	*Pluvialis fulva*	IM	**I-1**
	PASSERIFORMES		
	EMBERIZIDAE - Emberizids		
Saffron Finch	*Sicalis flaveola*	A	4
	FRINGILLIDAE - Fringilline and Carduleline Finches & Allies		
	Carduelinae - Carduline Finches		
House Finch	*Carpodacus mexicanus*	A	5
Yellow-fronted Canary	*Serinus mozambicus*	A	2
	Drepanidinae - Hawaiian Honeycreepers		
Hawaii Amakihi	*Hemignathus virens*	EB	5
	ESTRILDIDAE - Estrildid Finches		
	Estrildinae - Estrildine Finches		
African Silverbill	*Lonchura cantans*	A	6
Nutmeg Mannikin	*Lonchura punctulata*	A	3

KEY TO TABLE 1

ST Status

A Alien – Introduced to the Hawaiian Islands by humans

IM Indigenous Migratory Species

EB Endemic Breeding Species

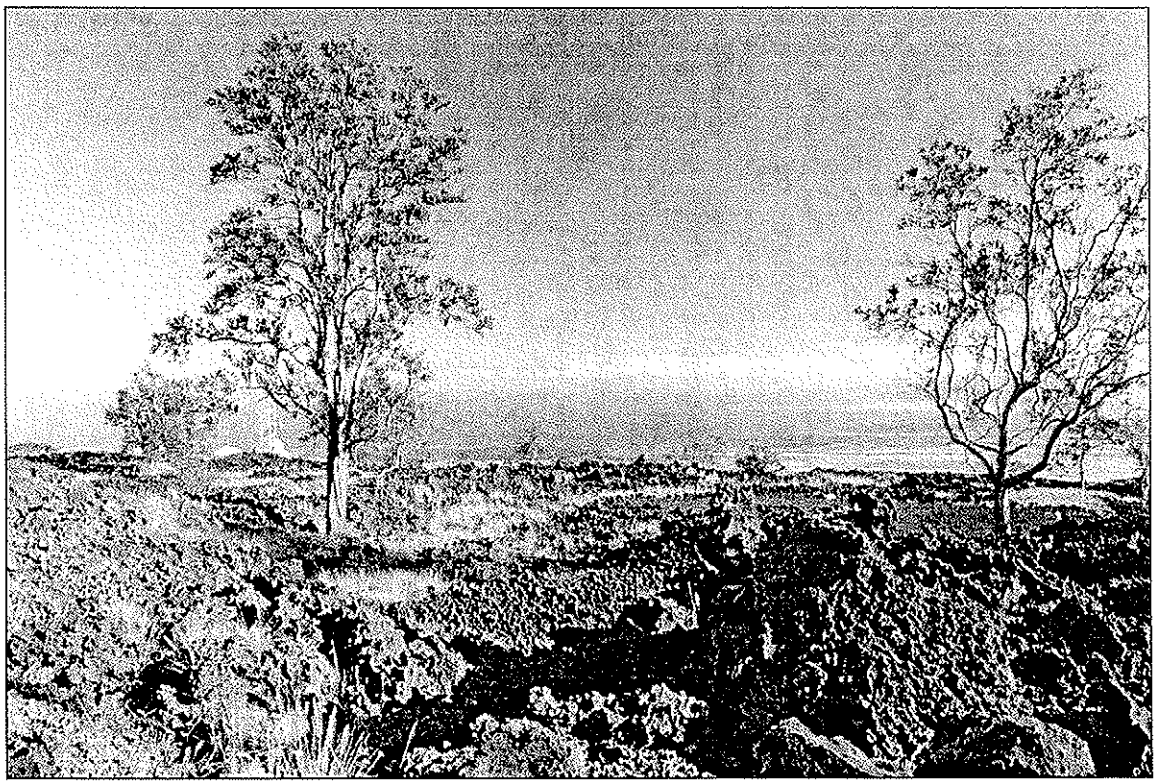
AB Abundance – Number of birds detected during the point count

I- Incidental observation, followed by the number of birds recorded

Botanical Survey Methods

A standard botanical survey was conducted on the site on April 5, 2008. Due to the small size of the site and the paucity of vegetation the survey was able to achieve 100% coverage of the site (Figure 3).

Figure 3 - DAGS ʻĀnuenue Tower Site, looking northwest



Botanical Survey Results

A total of seven flowering plants, and two ferns were recorded on the site (Table 2). Two of these, *ʻŌhiʻa* (*Metrosideros polymorpha*), and *ʻuhaloa* (*Waltheria indica*), are native species. The remaining five species are considered to be alien to the Hawaiian Islands (Table 2). The majority of the site is bare lava; all plants with the exception of fountain grass (*Pennisetum setaceum*), and air plant (*Kalanchoë pinnata*) were seen in extremely small numbers. The site is mostly bare rock; with the exception of the few *ʻōhiʻa* present on the site the vegetation is typical of ruderal areas on the Island of Hawaii, at this elevation and location.

Table 2 – Plant Species Detected DAGS ʻĀnuenue Tower Site

Scientific Name	*Common Name*	*ST*
FERNS & FERN ALLIES		
DRYOPTERIDACEAE		
Cyrtomium falcatum (L.f.) C. Presl	holly fern	Nat
NEPHROLEPIDACEAE		
Nephrolepis multiflora (Roxburgh) Jarrett ex Morton	common sword fern	Nat

Table 2
Continued

Scientific Name	*Common Name*	*ST*
	FLOWERING PLANTS	
	DICOTYLEDONES	
ASTERACEAE		
Sphagneticola trilobata (L.) Pruski	wedelia	Nat
CRASSULACEAE		
Kalanchoë pinnata (Lam.) Pers.	air plant	Nat
MYRTACEAE		
Metrosideros polymorpha Gaud.	*ʻōhiʻa*	**End**
SOLANACEAE		
Solanum linnaeanum Hepper & P. Jaeger	apple of Sodom	Nat
STERCULARIACEAE		
Waltheria indica L.	*ʻuhaloa*	Ind
VERBASCUM		
Verbascum thapsus L.	wooly mullien	Nat
	MONOCOTYLEDONES	
POACEAE		
Pennisetum setaceum (Forssk.) Choiv.	fountain grass	Nat

KEY TO TABLE 2

ST Status

Nat Introduced to the Hawaiian Islands by humans, and has become established in the wild

End Native and unique to the Hawaiian Islands

Ind Indigenous - Native to the Hawaiian Islands but also found elsewhere naturally

Discussion

Mammalian Resources

The findings of the mammalian survey are consistent with the xeric habitat present on the site and the surrounding property. With almost no vegetation on the project site (Figure 3) there is not much on the site to attract mammalian species.

Although no Hawaiian hoary bats were detected during the course of this survey, it is probable that bats do occasionally use resources within the general area and project site. Unlike nocturnally flying seabirds, which often collide with man-made structures, bats are uniquely adapted to avoid collision with most obstacles, man-made or natural. They navigate and locate their prey primarily by using ultrasonic echolocation, which is sensitive enough to allow them to locate and capture small volant insects at night.

Recent research on this species completed on the Island of Hawaii has shown that the species is present on a seasonal basis in almost all areas on the Island where dense vegetation and tree cover is present. The research also indicates that the bat is a human commensal species often associated with tree farms and other agricultural efforts; bats are also attracted to outdoor lighting which attract volant insects on which this species forages (Bonaccorso et al. 2004, 2007).

Although none of the four established alien rodents known from the Island of Hawaii were detected during the course of this survey, it is probable that roof rat (*Rattus r. rattus*), Norway rat (*Rattus norvegicus*), Polynesian rat (*Rattus exulans hawaiiensi*), and European house mice (*Mus musculus domesticus*), use resources within the general project area.

Avian Resources

Avian diversity and densities detected during this survey were very low. This was to be expected given the fountain grass dominated xeric habitat present on the site and the surrounding property.

Two of the eight avian species detected during the course of this survey are native to the Hawaiian Islands. Hawai'i 'Amakihi is an endemic honeycreeper, and this, the nominate race is restricted to the island of Hawai'i. This species has no special regulatory protection associated with it under either federal or State of Hawaii endangered species statutes. The second native species recorded, Pacific Golden-Plover, is a common indigenous migratory shorebird species,seen throughout the state between July and late April each year. The remaining six avian species detected are all considered to be alien to the Hawaiian Islands.

Although not detected during this survey it is possible that small numbers of the endangered endemic Hawaiian Petrel, or *ua 'u*, and the threatened Newell's Shearwater, or *'a 'o*, over-fly the project site between the months of May and November (Banko 1980a, 1980b, Day et al. 2003a, Harrison 1990).

Hawaiian Petrels were formerly common on the Island of Hawai'i (Wilson and Evans 1890–1899). This pelagic seabird reportedly nested in large numbers on the slopes of Mauna Loa and in the saddle area between Mauna Loa and Mauna Kea (Henshaw 1902), as well as at the mid to high elevations of Mount Hualālai. It has, within recent historic times, been reduced to relict breeding colonies located at high elevations on Mauna Loa and, possibly, Mount Hualālai (Banko 1980a, Banko et al. 2001, Cooper and David 1995, Cooper et al. 1995, Day et al. 2003, Harrison 1990, Hue et al. 2001, Simons and Hodges 1998).

Newell's Shearwaters were formerly common on the Island of Hawai'i (Wilson and Evans 1890–1899). This species breeds on Kaua'i, Hawai'i and Moloka'i in extremely small numbers. Newell's Shearwater populations have dropped precipitously since the 1880s (Banko 1980b, Day et al., 2003b). This pelagic species nests high in the mountains in burrows excavated under thick vegetation, especially *uluhe* (*Dicranopteris linearis*) fern.

The primary cause of mortality in both Hawaiian Petrels and Newell's Shearwaters is thought to be predation by alien mammalian species at the nesting colonies (U.S. Fish & Wildlife Service 1983, Simons and Hodges 1998, Ainley et al. 2001). Collision with man-made structures is

considered to be the second most significant cause of mortality of these seabird species in Hawai'i. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. When disoriented, seabirds often collide with manmade structures, and if they are not killed outright, the dazed or injured birds are easy targets of opportunity for feral mammals (Hadley 1961, Telfer 1979, Sincock 1981, Reed et al. 1985, Telfer et al. 1987, Cooper and Day 1998, Podolsky et al. 1998, Ainley et al. 2001).

In the USFWS response to the applicants request for technical assistance the service stated that two additional endangered avian species Nēnē (*Branta sandvicensis*), and Hawaiian Hawk (*Buteo solitarius*) are known to occur in the general project area (USFWS 2008b). Neither species was encountered during the course of this survey; the habitat present within and adjacent to the site is not habitat in which one would expect to find Nēnē, mainly due to the paucity of vegetation on the project site, and in the general project area. Both of these species are diurnal, and thus are unlikely to collide with a monopole tower. In the same letter the service stated that the candidate species Band-rumped Storm-Petrel (*Oceanodroma castro*) may use the project area while transiting to nesting colonies. To date only one abandoned nest of this species has been found on the Island of Hawai'i (USFWS 2007). Both the reported abandoned nest and secondary evidence of nesting have all been from high-elevation areas on the southwestern flank of Mauna Loa (Banko et al., 1991, USFWS 2007). If this species does transit the air space above the project site they would face the same potential risks posed by the tower to Newell's Shearwater and Hawaiian Petrel, discussed above.

Botanical Resources

The site is mostly bare rock; with the exception of the few *`ōhi`a* present on the site the vegetation is typical of ruderal areas on the Island of Hawaii, at this elevation and location.

Potential Impacts to Protected Species

Hawaiian Petrel and Newell's Shearwater

The principal potential impact that the development of the proposed communications tower poses to Hawaiian Petrels and Newell's Shearwaters is the increased threat that birds will be downed after colliding with the structure. It should be noted that the survey did not find any downed seabird remains around the existing HELCO and Hawaiian Telecom facilities located on either side of the proposed site.

Potential Impacts to Critical Habitat

There is no federally delineated Critical Habitat over laying the project site, thus no modification of Critical Habitat will occur as a result of this proposed action.

Conclusions

The modification of the current habitat on the site is not expected to result in significant impacts to any botanical, avian or mammalian species currently listed as threatened, endangered or proposed for listing under either the Federal, or State of Hawai'i endangered species programs. Furthermore, the development of the project is not expected to have a significant deleterious impact on native floral and faunal resources found within the North Kona District.

Recommendations

- To reduce the potential for interactions between nocturnally flying Hawaiian Petrels and Newell's Shearwaters with external lights and man-made structures, it is recommended that any external lighting that may be required in conjunction with the proposed structure be shielded (Reed et al. 1985, Telfer et al. 1987). This mitigation would serve the dual purpose of minimizing the threat of disorientation and downing of Hawaiian Petrels and Newell's Shearwaters, while at the same time complying with the Hawaii County Code § 14 – 50 *et seq.* which requires the shielding of exterior lights so as to lower the ambient glare caused by unshielded lighting to the astronomical observatories located on Mauna Kea.

Glossary:

'A'ā – Clinker lava formed by slow moving lava flows.
Alien - Introduced to Hawai'i by humans.
Ahupua'a – Traditional Hawaiian land division, usually extending from the uplands to the sea.
Commensal – Animals that share humans' food and lodgings, such as rats and mice.
Crepuscular – Twilight hours.
Diurnal – Daytime
Endangered – Listed and protected under the ESA as an endangered species.
Endemic – Native and unique to the Hawaiian Islands.
Indigenous - Native to the Hawaiian Islands, but also found elsewhere naturally.
Muridae – Rodents, including rats, mice and voles, one of the most diverse families of mammals.
Mauka – Upslope, towards the mountains
Makai – Down-slope, towards the ocean.
Nocturnal – Nighttime, after dark.
Ruderal – Disturbed, rocky, rubbishy areas, such as old agricultural fields and rock piles
Threatened - Listed and protected under the ESA as a threatened species.
Volant – Flying, capable of flight - as in flying insect.
Xeric – Extremely dry conditions or habitat.

DAGS – Hawai'i, Department of Accounting and General Services
DLNR – Hawai'i State Department of Land & Natural resources.
DOFAW – Hawai'i Division of Forestry and Wildlife
HELCO – Hawai'i Electric Light Company
ICSD – States Information Communications Services Division
ESA – Endangered species act of 1973, as amended
USFWS – U.S. Fish & Wildlife Service

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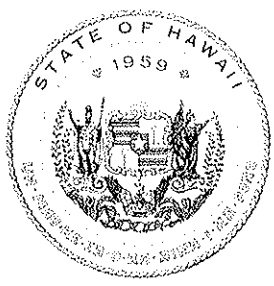

APPENDIX C

LINDA LINGLE
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KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

7739-01 Rec'd 3/20/08 SSE
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cc: DAGS em

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

March 17, 2008

Dr. Alan E. Haun
Haun & Associates
HRC 1, Box 4730
Kea'au, Hawai'i 96749

LOG NO: 2008.0577
DOC NO: 0803TD06
Archaeology

Dear Dr. Haun:

SUBJECT: **Chapter 6E-42 Historic Preservation Review of an Archaeological Assessment Report for a 0.5-Acre Radio Site and Tower Facility, Kaupulehu, North Kona District, Island of Hawai'i**
TMK: (3) 7-2-02: 001 por.

Thank you for submitting the assessment report entitled *Archaeological Assessment, Information Communication Services Division Anuenue Radio Site and Towers, TMK (3) 7-2-02: portion 01, Land of Kaupulehu, North Kona District, Island of Hawai'i* (A.E. Haun, Report 538-010208, January 2008). The report was received in the Kapolei office February 8, 2008, and in Hilo on March 6, 2008.

The report documents conditions and findings of a 100% pedestrian survey of the 0.5-acre parcel selected for a proposed radio tower and associated facilities, such as a generator, an equipment room and a fuel storage tank. The proposed project area will be accessed via an existing telephone and electrical road easement. The project area is located at 3,080-3,085 ft in elevation, and was found to be entirely within the nineteenth century Kaupulehu lava flow. This flow has no soil development and is nearly vegetation-free.

No evidence of historic properties was identified during the assessment, and no further archaeological work is recommended in the report. Based on the findings of this assessment, we believe that there are no historic properties within the proposed project area, and that construction of the fire station will have no effect on historic properties. We also concur with the recommendation that no further archaeological work is warranted for this project area.

This report is accepted in accordance with HAR §13-284-5 (5A). Please contact Theresa Donham at 987-5001 or Theresa.K.Donham@hawaii.gov if you have any questions or concerns regarding this letter.

Aloha,

Nancy McMahon, Acting Archaeology Branch Chief
State Historic Preservation Division

7739-01

1/31/08

Report 538-010208

cc: CSH
em

ARCHAEOLOGICAL ASSESSMENT

INFORMATION COMMUNICATION SERVICES DIVISION

ANUENUE RADIO SITE AND TOWERS

TMK: (3) 7-2-02: PORTION 01

LAND OF KAUPULEHU

NORTH KONA DISTRICT

ISLAND OF HAWAI'I

By:

Alan E. Haun, Ph.D.

Prepared for:

Mr. John Sakaguchi
Wilson, Okamoto Corporation
1907 Beretania Street, Suite 400
Honolulu, Hawaii 96826

January 2008

Haun & Associates
Archaeological, Cultural, and Historical Resource Management Services
HCR 1 Box 4730, Keaau, Hawaii 96749 Phone: 982-7755 Fax: 982-6343

Introduction

At the request of Mr. John Sakaguchi of Wilson Okamoto Corporation, Haun & Associates has prepared an archaeological assessment for a c. 0.5-acre parcel located in the Land of Kaupulehu, North Kona District, Island of Hawai'i (*Figures 1* and *2*). The parcel is situated within TMK: (3) 7-2-02:01. The objective of the survey was to satisfy historic preservation regulatory review requirements of the Department of Land and Natural Resources-Historic Preservation Division (DLNR-SHPD), as contained within Hawaii Administrative Rules, Title 13, DLNR, Subtitle 13, State Historic Preservation Rules (2003).

No archaeological sites or features were identified during the survey, therefore the project is documented as an archaeological assessment pursuant to Chapter 13-284-5(5A). As required, this report contains a description of the project area and field methods.

Project Area Description

The project area is comprised of a square, c. 0.5-acre parcel located on the 1800-1801 Kaupulehu lava flow at elevations that range from 3,080 to 3,085 ft. The ground surface in the parcel consists of uneven weathered a'a lava that slopes gently towards the northwest. No soil is present. According to Sato et al., "this lava has practically no soil covering and is bare of vegetation, except for mosses, lichens, ferns, and a few small ohia trees...it is a mass of clinkery, hard glassy, sharp pieces piled in tumbled heaps" (1973:34). The underlying lava bedrock in the project area was deposited from Hualalai Volcano from between 3,000 and 5,000 years ago (Wolfe and Morris 2001:12). The rainfall in the vicinity of the project area varies from 20 to 40 inches per year (Juvik and Juvik 1998:57) and the mean annual temperature is approximately 72 degrees (Armstrong 1983: 63-64). The vegetation noted during the present project consisted of sparse fountain grass (*Pennistetum setaceum* [Forsk.] Chiov.) and one *ohia* tree (*Metrosideros collina* {Forst.} Gray). Project area overview photographs are presented in *Figures 3* and *4*.

The entire *ahupua'a* of Kaupulehu, including the present project area was awarded to Lota Kamehameha as Land Commission Award 7715:10 during the Mahele. Currently the land is owned by Bishop Estate. The project area is undeveloped and is situated between two existing communications tower facilities operated by Hawaiian Telephone Company and Hawaiian Electric Light Company, Inc. Evidence of bulldozer activity was noted adjacent to the parcel to the southeast.

Methods

The survey fieldwork was conducted by Dr. Alan Haun and Project Supervisor Terry Miner, M.A., on December 31, 2007. Approximately 1 labor-day was required to complete the fieldwork portion of the project. The archaeological investigation of the project area consisted of a 100% surface examination with the surveyors walking transects at 10-meter intervals. Ground surface throughout the project area was excellent.

Findings

No archaeological sites or features were identified within the project area. This is due to the parcel's location on the historic Kaupulehu lava flow which is comprised of uneven lava with no soil development. No further archaeological work is recommended for the property based on the survey results.

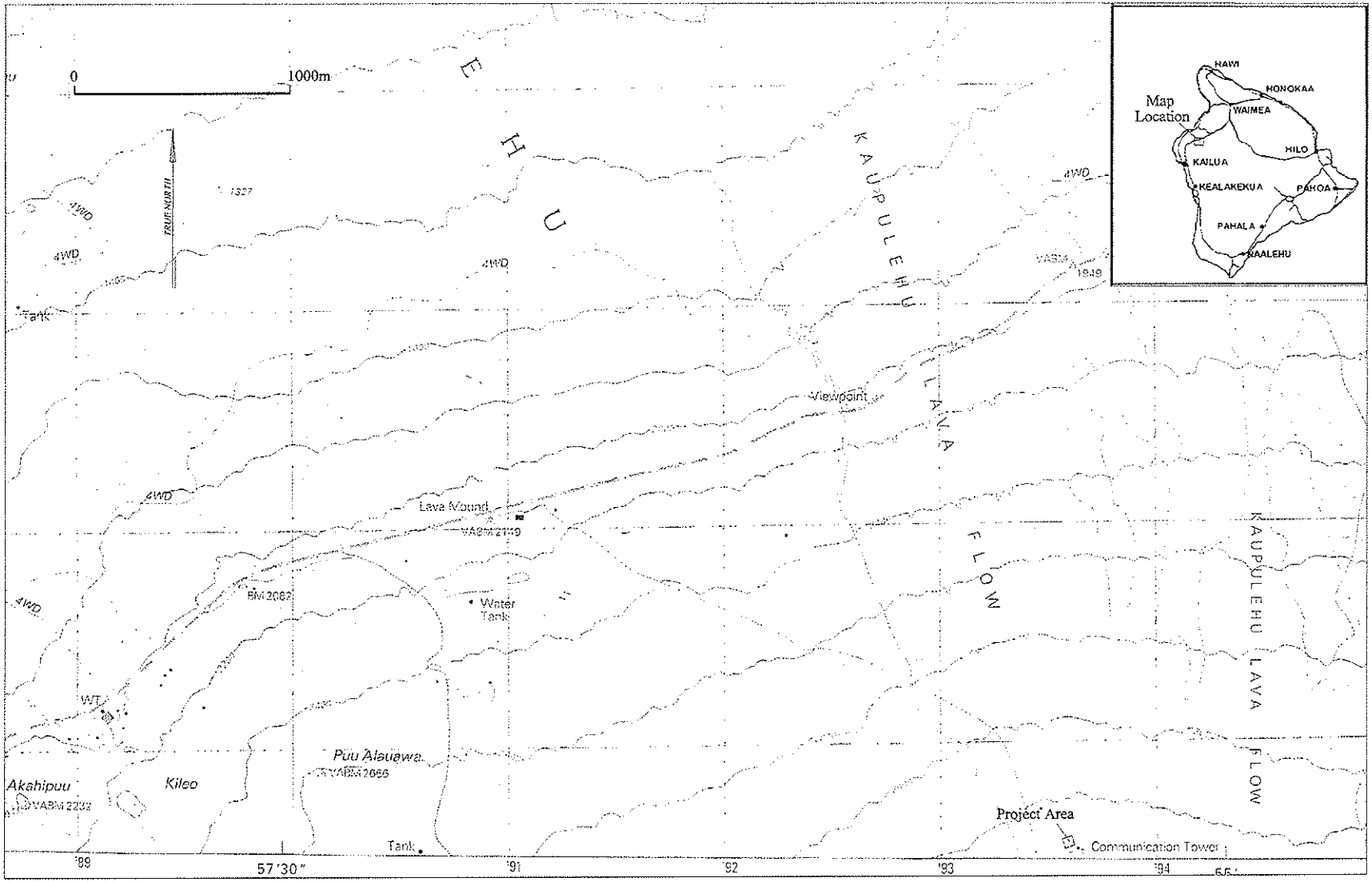

Figure 1. Portion of 1996 Kiholo Quadrangle showing Project Area

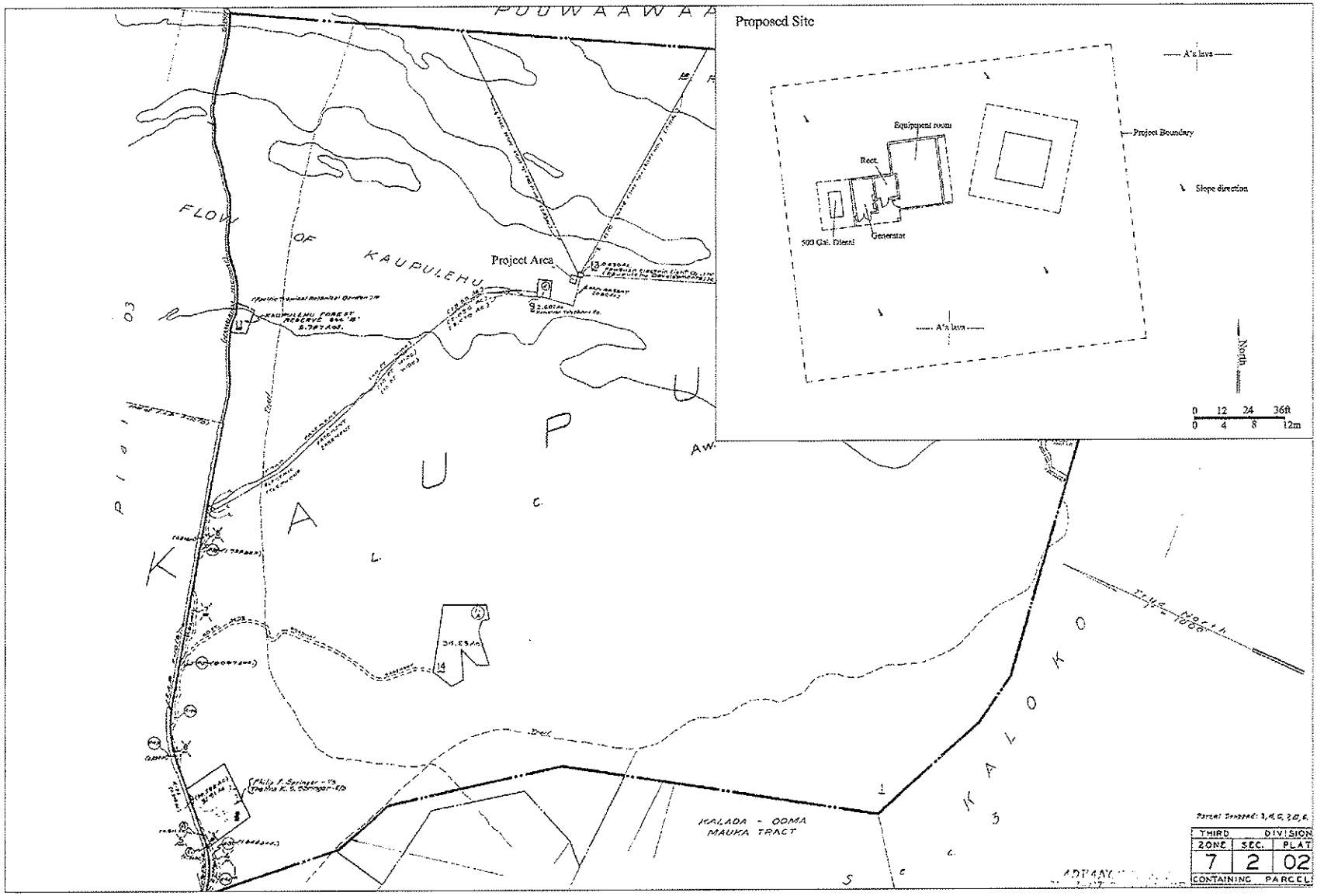

Figure 2. Tax Map Key 7-2-02 showing Project Area

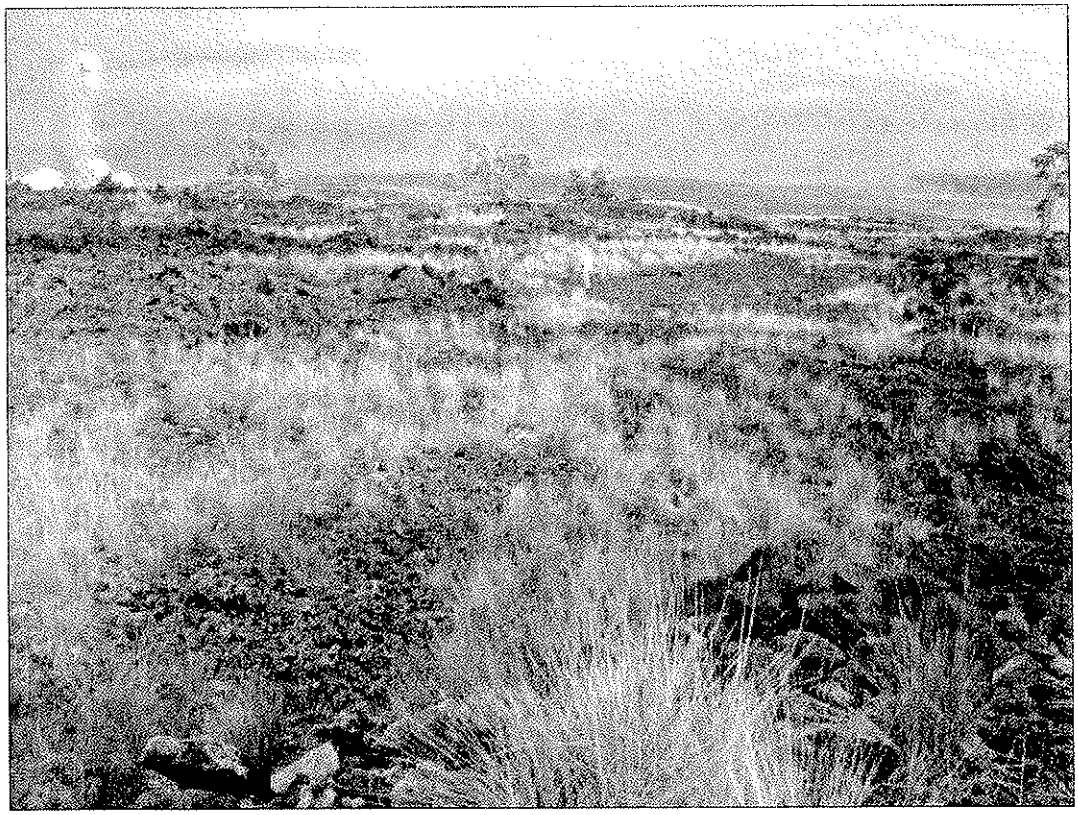

Figure 3. Project Area Overview, view to northwest

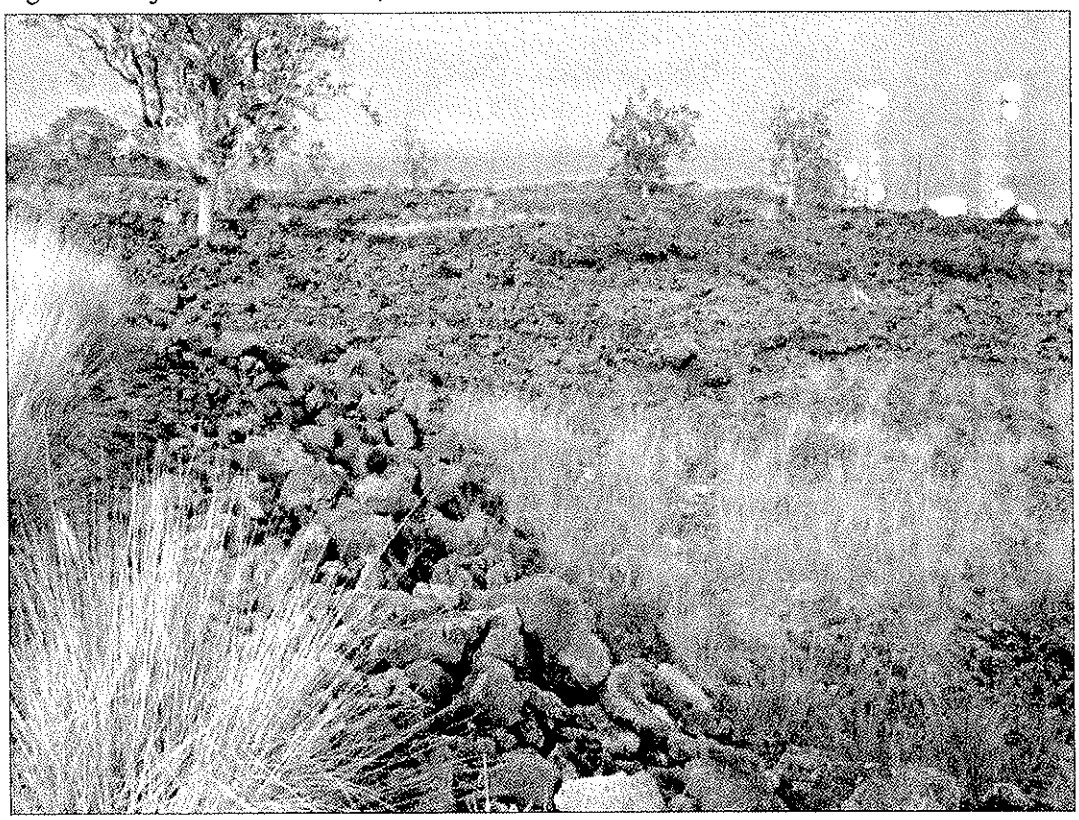

Figure 4. Project Area Overview, view to west-northwest

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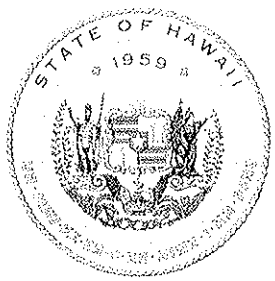

APPENDIX D

DRAFT
Cultural Impact Evaluation for the Proposed Ānuenue Radio Sites and Towers Project, Ka'ūpūlehu Site, Ka'ūpūlehu Ahupua'a, North Kona District, Hawai'i Island
TMK: [3] 7-2-002:001 por.

Prepared for

Wilson Okamoto Corporation

Prepared by

Todd Tulchin, B.S.

and

Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawai'i, Inc.

Kailua, Hawai'i

(Job Code: KAUPULEHU 1)

April 2008

The complete Cultural Impact Evaluation is on file with the State of Hawaii DLNR Historic Preservation Division, the Office of Hawaiian Affairs, and the Office of Environmental Quality Control.

O'ahu Office
P.O. Box 1114
Kailua, Hawai'i 96734
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Management Summary

Reference	Cultural Impact Evaluation for the Proposed Ānuenue Radio Sites and Towers Project, Ka'ūpūlehu Site, Ka'ūpūlehu Ahupua'a, North Kona District, Hawai'i Island (TMK: [3] 7-2-002:001 por.) (T. Tulchin et. al 2008)
Date	April 2008
Project Number (s)	Cultural Surveys Hawai'i Inc. (CSH) Job Code: KAUPULEHU 1; DAGS JOB No. 11-10-0477
Project Location	The project area is located on the Ka'ūpūlehu Lava Flow, approximately 2.3 km (1.4 mi.) *mauka* (inland) of the Māmalahoa Highway, at approximately 1,000 m (3,300 ft.) elevation. This area is depicted on the 1996 USGS 7.5-Minute Series Topographic Map, Kīholo Quadrangle.
Land Jurisdiction	Private; Kamehameha Schools
Agencies	State Historic Preservation Division / Department of Land and Natural Resources (SHPD/DLNR); State of Hawai'i Department of Accounting and General Services (DAGS)
Project Description	The proposed project involves the construction of a State of Hawai'i Information and Communication Service Division (ICSD) Ānuenue Radio Site and Tower. The telecommunications facility would include: a communications tower between 120 and 140 ft. tall with microwave dish and other antennas; an approximately 900 sq. ft. building containing radio equipment, backup generator, air conditioning, etc.; a diesel fuel tank; and a driveway connecting the facility to the existing access road. Minimally, land disturbing activities would include grubbing, grading, and excavations for subsurface utilities.
Project Acreage	Approximately 0.52 acre
Area of Potential Effect (APE)	The area of potential effect includes the entire approximately 0.52 acre project area. While this investigation focused on the project APE, for the purposes of this CIE, the study area included the entire Ka'ūpūlehu *Ahupua'a*.
Document Purpose	At the request of Wilson Okamoto Corporation, CSH undertook this evaluation of cultural impacts to satisfy Hawai'i Revised Statutes (HRS) Chapter 343, which mandates assessment of potential impacts to cultural practices and resources by proposed projects undergoing an environmental review. The subject CIE provides preliminary information pertinent to the assessment of the proposed project's impacts to cultural practices.

Consultation Effort	An effort was made to contact Hawaiian organizations, agencies and community members in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the project area and vicinity. The organizations included the State Historic Preservation Division (SHPD), the Office of Hawaiian Affairs (OHA), and Hawai'i Island agencies pertinent to the proposed project area.
Cultural Impact Evaluation Results and Recommendations	An archaeological assessment investigation (Haun 2008) found the project area to consist of uneven *a'a* lava with no soil present. No historical properties or archaeological features were observed within the project area, and vegetation was limited to patchy fountain grass and one *'ō'hia* tree. None of the community contacts interviewed for this evaluation identified any strong concerns regarding the proposed project's impact on cultural practices and resources. Ms. Hannah Kihalani Springer mentioned a *kauwila* (native tree in the Buckthorn/Rhamnaceae Family) forest near the project area, but said it will likely not be impacted by the proposed project. Mr. Arthur Mahi had no specific cultural comments but shared his concerns about the proposed project possibly interfering with the radio, television and telecommunication reception near the project area. Based on the above considerations, Cultural Surveys Hawai'i finds the proposed project will have minimal impact upon native Hawaiian cultural resources, beliefs and practices. Therefore, a cultural impact assessment (CIA) is not warranted.

Section 4 Community Consultation Effort

Throughout the course of this evaluation, an effort was made to contact and consult with Hawaiian cultural organizations, government agencies, and individuals who might have knowledge of and/or concerns about cultural resources and practices specifically related to the project area. This CIE includes some consultation but no formal interviews.

A number of attempts (3-4) were made to contact individuals, organizations, and agencies apposite to the cultural impact evaluation for Ka'ūpūlehu Ahupua'a. The community consultation effort was made by letter, e-mail, and telephone contact. All letters and emails were sent along with a map and aerial photograph of the project area with the following text:

> At the request of the Wilson Okamoto Corporation, Cultural Surveys Hawai'i Inc. (CSH) is conducting a Cultural Impact Evaluation (CIE) for the proposed Ānuenue Building and Tower Ka'ūpūlehu Project, Ka'ūpūlehu Ahupua'a, North Kona District, Island of Hawai'i, TMK (3) 7-2-002:001.
>
> The proposed project site is located *mauka* of Māmalahoa Highway, about 9 miles northeast of Kailua-Kona and 8 miles east of the Keāhole Airport, on the northern slope of Hualālai Volcano within a 7,031-acre parcel owned by B.P. Bishop Estate and used for grazing. The State of Hawai'i Department of Accounting and General Services' proposed plan consists of an unmanned telecommunications facility built on 0.52 acres to support public safety and public agency radio systems. This proposed facility is located adjacent to two communication facilities and includes a 4-leg tower between 120-140 feet tall with 14 microwave dish antennas, a 900-square foot high building and other supporting facilities. Please see aerial photograph and USGS map of project.
>
> The purpose of this cultural study is to assess potential impacts to cultural resources and practices as a result of proposed development in the Ka'ūpūlehu Ahupua'a. We are seeking your *kōkua* and guidance regarding the following aspects of our study:
>
> - General history and present and past land use of the project area.
> - Knowledge of cultural sites which may be impacted by future development of the project area - for example, historic sites, archaeological sites, and burials.
> - Knowledge of traditional gathering practices in the project area, both past and ongoing.
> - Cultural associations of the project area, such as legends and traditional uses.
> - Referrals of *kūpuna* or elders and *kama'āina* who might be willing to share their cultural knowledge of the project area and the surrounding *ahupua'a* lands.
> - Any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the project area.

The results of the community consultation process are presented in Table 1 below. Following the table, summaries of community responses to CSH are presented in Section 4.1.

Table 1. Summary of consulted individuals for this CIE

Name	Background, Affiliation	Comments
Chang, Clement	Trail and Access Specialist, Ancient and Historic Trails, Dept. of Land and Natural Resources, Div. of Forestry and Wildlife	CSH sent letter and maps on Mar. 18, 2008. CSH left a message on April 8, April 14, April 18, and again on April 22, 2008. Mr. Chang called on April 28 and stated there were no historic trails near the project area that he is aware of.
Davis, Morgan	State Historic Preservation Division, Hawai'i Island Office	CSH sent letter and maps on Mar. 18, 2008.
Kuali'i, Melvyn Kaleo	Member, Hawai'i Island Burial Council	CSH sent letter and maps on Mar. 18, 2008. CSH sent an email follow-up with maps on April 16. Another email inquiry was sent on April 22.
Mahi, Arthur		CSH called Mr. Mahi on April 22, 2008 to provide project description and discuss the proposed facility. Mr. Mahi provided a statement which is presented in Section 4.2 below.

McDonald, Ruby	Office of Hawaiian Affairs, Community Resources Manager	CSH sent letter and maps on Mar. 18, 2008. CSH met with Mrs. McDonald on April 15. She shared the following comments: **"I am not familiar with this** area. You need to go and check with those who built the towers. I believe it is Nextel that has a lot of towers in that area. If I find any other information, I will call CSH and leave my comments with **them."**
Nāmu'o, Clyde:	Office of Hawaiian Affairs, Administrator	CSH sent letter and maps on Mar. 18, 2008. Previously, in response to a request from Wilson Okamoto Corporation, OHA provided pre-assessment consultation comments on the project area in a letter dated Jan. 23, 2008. See Appendix below.
Nazara, Cynthia	Cultural descendant, member of **Hawai'i Island Burial Council**	CSH sent letter and maps on Mar. 18, 2008. CSH left a message on April 8, and emailed letter and maps again on April 12. CSH sent follow-up email on April 16, 2008.
Paik, Linda Kaleo	Cultural Specialist, State Historic Preservation Division	CSH sent letter and maps on Mar. 18, 2008.
Springer, Hannah	Hawaiian cultural practitioner and *kāma'aina* whose *ohana* has **lived in Ka'ūpūlehu** for generations	CSH sent letter and maps on Mar. 18, 2008. CSH left message on April 8 and April 16. CSH telephoned on April 22, and Ms. Springer commented on the project area. See Section 4.1 below.

Young, Charles	Chair, Hawai'i Island Burial Council	CSH mailed letter and maps on April 12, 2006. CSH left message on April 16, and again on April 22.

4.1 Summaries of Community Consultation

4.1.1 Ms. Hannah Kihalani Springer

CSH interviewed Ms. Springer by telephone on April 22, 2008. A former Office of Hawaiian Affairs trustee and a member of Kahu Ku Mauna, the cultural advisory group which advises the Board of Regents of the University of Hawai'i and the Mauna Kea Management Board, Ms. Springer is an active Hawaiian cultural practitioner whose family has resided in Ka'ūpūlehu *ahupua'a* and nearby *ahupua'a* for generations. Her great-great grandmother, Luka Hopula'au, was the first wife of John Avery Maguire, the founder of Hu'ehu'e Ranch.

When asked if she had any cultural concerns regarding the proposed telecommunications facility, Ms. Springer said the following:

> I haven't been on the site for a number of years now, and the 1980s was the last time. But I do know the proximity to the dry forest resource which is the primary resource. As I recall, the project area is mostly lava and *'ōhi'a* trees. Even though it is within the vicinity of the *kauwila* (possibly the native Buckthorn, *Alphitonia ponderosa* or *Colubrina oppositifolia*) forest, I don't believe the project will impact it.

In response to the question if there are historic trails near the project site, Ms. Springer replied:

> There are no trails nearby, on that lava flow. There are trails to the left and right, but not on the Ka'ūpūlehu flow. The Ka'ūpūlehu trails are within the vicinity of the Hualālai Ranch entrance, which is quite a distance from the project site. The flow itself, for the lineage of Pele and their cohort, it has value to them as the most recent expression of Pele coming to Kona. The flow itself has value.

4.1.2 Mr. Arthur Mahi

Mr. Arthur Mahi was interviewed by CSH via telephone on April 22, 2008. Born July 5, 1933 in Laupāhoehoe, North Hilo, Mr. Mahi is a pureblood Native Hawaiian who is knowledgeable with the traditional Hawaiian way of life. His maternal great-great grandfather was Kuakahela, who was the *konohiki* of Ka'ūpūlehu *ahupua'a* when Kuakini was the governor. As a baby, he was given in the *hanai* custom to his maternal grandfather, Keaua Kuakahela, who was born in 1870 and skilled in Hawaiian beliefs and practices. Mr. Mahi was chosen by his grandfather to carry on the knowledge of the Hawaiian culture to teach others.

During his childhood, he would spend his vacations in Ka'ūpūlehu and as an adult, he would spend weekends visiting *ohana*. He remembers using the trails in Ka'ūpūlehu to visit friends and family or to go down to the beach. Mr. Mahi said the following: "When I worked in Hu'ehu'e

Ranch, there was a *mauka-makai* trail; we used it to down to Kūki'o to go fishing. We would come down on Friday and come up again on Sunday."

When asked if he had any specific comments about the proposed project, Mr. Mahi stated:

> When they put that thing on, it might affect our T.V., radio and telecommunication reception. We have one already up there, in Ka'ūpūlehu *mauka*. Why do they have to make it higher? How many are they going to need? It might interfere with the signals now, it might jam things up.